



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**BUILDING SCHOOL RESILIENCE IN AN ERA OF
MULTIPLE THREATS**

by

Kenneth J. Van Sparrentak

September 2008

Thesis Co-Advisors:

Glen Woodbury
Nadav Morag

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY	2. REPORT DATE September 2008	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE: Building School Resilience in an Era of Multiple Threats		5. FUNDING NUMBERS	
6. AUTHOR(S) Kenneth J. Van Sparrentak			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A		10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE A	
13. ABSTRACT There is a lack of attention towards the process of recovery in U.S. schools despite their vulnerability to natural and intentional threats with the potential of creating mass casualties. By promoting resilience as a component of recovery as similarly modeled in Israel and the UK, the U.S. can empower children and the at-large community, enabling a quicker recovery. Case studies from past mass casualty incidents from a variety of threat mechanisms involving schools were analyzed to assess (1) time criticality, (2) lack of information sharing, (3) family reunification, (4) lockdown considerations, and (5) first responder considerations. Regardless of threat mechanism, most variables will factor in a school's ability to recover, including the reality that the longer the exposure to the trauma, the greater the psychosocial impact and greater difficulty in recovery. School administrators and first responders, primarily from public health and law enforcement, should collaborate on efforts in the pre-event phase to mitigate both physical and psychological impacts from trauma. The success of fire prevention education has promoted resilience for decades. Similar strategies should focus on all hazards and the term "resilience" should become a natural term in the American lexicon.			
14. SUBJECT TERMS Schools, Preparedness, Resilience, Recovery, Psychosocial, Mass Casualty Incidents, Public Health, School Resource Officers, Lockdowns, Crisis Response Teams			15. NUMBER OF PAGES 167
16. PRICE CODE			
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

BUILDING SCHOOL RESILIENCE IN AN ERA OF MULTIPLE THREATS

Kenneth J. Van Sparrentak
Fire Chief, Walled Lake Fire Department
B.S., Madonna University, 1998

Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)**

from the

**NAVAL POSTGRADUATE SCHOOL
September 2008**

Author: Kenneth J. Van Sparrentak

Approved by: Glen Woodbury
Thesis Co-Advisor

Nadav Morag, Ph.D.
Thesis Co-Advisor

Harold A. Trinkunas
Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

There is a lack of attention towards the process of recovery in U.S. schools despite their vulnerability to natural and intentional threats with the potential of creating mass casualties. By promoting resilience as a component of recovery as similarly modeled in Israel and the UK, the U.S. can empower children and the at-large community, enabling a quicker recovery. Case studies from past mass casualty incidents from a variety of threat mechanisms involving schools were analyzed to assess (1) time criticality, (2) lack of information sharing, (3) family reunification, (4) lockdown considerations, and (5) first responder considerations. Regardless of threat mechanism, most variables will factor in a school's ability to recover, including the reality that the longer the exposure to the trauma, the greater the psychosocial impact and greater difficulty in recovery.

School administrators and first responders, primarily from public health and law enforcement, should collaborate on efforts in the pre-event phase to mitigate both physical and psychological impacts from trauma. The success of fire prevention education has promoted resilience for decades. Similar strategies should focus on all hazards and the term “resilience” should become a natural term in the American lexicon.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PROBLEM STATEMENT	1
B.	RESEARCH QUESTIONS.....	2
C.	LITERATURE REVIEW	2
D.	METHODOLOGY & SIGNIFICANCE.....	8
E.	CHAPTER SUMMARY.....	11
II.	EXISTING MASS CASUALTY THREATS.....	13
A.	NATURAL THREATS.....	14
B.	SCHOOL SHOOTINGS IN THE UNITED STATES.....	16
C.	TERRORISM.....	18
D.	CHAPTER SUMMARY.....	25
III.	CASE STUDIES – MACRO VIEW CHRONOLOGY OF MASS CASUALTY INCIDENTS	29
A.	NATURAL/ACCIDENTAL EVENTS.....	29
1.	Collinwood School Fire - Collinwood, Ohio (March 4, 1908).....	29
2.	New London School Explosion - New London, Texas (March 18, 1937)	30
3.	Our Lady of the Angels School Fire – Chicago, Illinois (December 1, 1958).....	31
B.	SCHOOL SHOOTINGS	33
1.	Thurston High School - Springfield, Oregon (May 21, 1998).....	33
2.	Columbine High School - Littleton, Colorado - (April 20, 1999) ..	33
3.	Platte Canyon High School, Bailey, Colorado - (September 27, 2006)	36
4.	The Amish School Shooting at West Nickel Mines, Pennsylvania - (October 2, 2006).....	36
5.	Virginia Tech University (VTU), Blacksburg, Virginia – (April 16, 2007)	37
6.	Northern Illinois University - Dekalb, Illinois (February 14, 2008)	38
C.	TERRORISM	39
1.	Ma'alon, Israel - School Attack (May 15, 1974).....	39
2.	Beslan, Russia, September 1 – 3, 2004	40
D.	PROXIMAL THREATS TO SCHOOLS	43
1.	Oklahoma City Bombing – April 19, 1995.....	44
2.	New York – September 11, 2001.....	45
3.	SARS – Severe Acute Respiratory Syndrome – Spring 2003	46
4.	Hurricane Katrina (August 30, 2005)	47
E.	SUMMARY OF CHALLENGES FACING SCHOOLS.....	48
IV.	COMPARATIVE ANALYSIS AND FINDINGS	51
A.	VARIABLES OF ANALYSIS	51

1.	Time Criticality	51
2.	Information Sharing	55
3.	Family Reunification	58
4.	Lockdown Considerations - Security	61
5.	First Responder Readiness.....	64
B.	CHAPTER SUMMARY.....	74
V.	THE PSYCHOSOCIAL IMPACT OF MASS CASUALTY INCIDENTS ON FAMILY, SCHOOLS, AND THE COMMUNITY	77
A.	PSYCHOLOGICAL RECOVERY	78
B.	CHARACTERISTICS OF MASS CASUALTY DISASTER SURVIVORS	86
1.	PTSD	88
2.	Panic	93
C.	COMMUNITY SUPPORT	97
D.	CHAPTER SUMMARY.....	100
VI.	RESILIENCE AS A METHOD TO ALLEVIATE IMPACTS	103
A.	WHAT IS RESILIENCE?	104
B.	U.S. RESILIENCE COMPARED TO ISRAEL AND THE UNITED KINGDOM (UK)	107
C.	RESILIENCE IN SCHOOLS	109
D.	RESILIENCE IN CHILDREN	114
E.	GOVERNMENT TRUST.....	118
F.	ORGANIZATIONAL RESILIENCE/SCHOOLS.....	121
G.	CHAPTER SUMMARY.....	123
VII.	RECOMMENDATIONS.....	125
A.	EXPANDING RESPONSE TEAMS WITH A FOCUS ON RECOVERY.....	125
B.	PROVIDE A STRONGER LINK BETWEEN SCHOOLS AND PUBLIC HEALTH	127
C.	ENGAGE LOCAL LAW ENFORCEMENT	129
D.	EDUCATE PARENTS	131
E.	PROMOTE RESILIENCE IN SCHOOLS	132
F.	FUTURE RESEARCH.....	135
1.	The Impact of Terrorism on Children	135
G.	CHAPTER SUMMARY.....	135
	APPENDIX. FATAL SCHOOL SHOOTINGS IN THE UNITED STATES	137
	LIST OF REFERENCES	143
	INITIAL DISTRIBUTION LIST	151

LIST OF FIGURES

Figure 1.	Circles of Vulnerability following Terrorism.....	99
-----------	---	----

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1.	Case study analysis using critical variables. Blacked out areas indicate the variable is either a) not applicable, i.e., school shooter policy in relation to school fires or b) information was not discovered in research.	73
----------	---	----

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGEMENTS

The Naval Postgraduate School is the premier homeland security program in the United States because of the high standards set by Christopher Bellavita and the entire faculty and the support staff of people like Greta Marlatt and Mark Fish. Thank you for one of the most challenging and rewarding experiences in my adult life. Nadav Morag and Glen Woodbury were incredibly supportive beyond the call of duty as my thesis co-advisors. My next goal is to acquire your patience. I cannot say enough about my fellow classmates and friends in cohort 702 and 701. I value your friendship moving forward and it is hard to imagine not meeting again in another three months. You are truly the cream of the crop and I am humbled to be your classmate.

The City of Walled Lake, Michigan, provided their unwavering support throughout the eighteen months. Special thanks to Mayor William Roberts and council members Casey Ambrose, Edmond Bennett, Diane Cartter, Larry Fox, Monica Lesnau, Angie Maher, Chief Brent Liddy and the membership of the Walled Lake Police Department, City staff including Cathy Behrens, Crystal Opalko, and Cathy Buck, and Assistant Superintendent of the Walled Lake Consolidated School District, Dr. Michael (Mick) Beauchamp. Special thanks to my command staff at the Walled Lake Fire Department and the entire department. To Captain's Matt Salow, Jason Gonzalez, Ryan Potter, and Fire Marshal Jim Coomer who kept operations running smoothly as I left "yet again" for school. I am proud to be one of you.

Thank to the Michigan graduates before me; General Michael McDaniel, Linda Scott, and Jeff Friedland; For their letters of support; Michael Sturm, Julie Secontine, Clarence Goodlein, and Jerry Walker; To Michael Mason, Chief Bill Pessemier, and Dr. Scott Poland, for your service and valuable knowledge and expertise during the interview process.

Nothing surpasses the support of family and I am blessed to have two beautiful daughters in Murphy and Lauren. Thanks for helping mom in my absence and checking on dad frequently to see if I had lost it yet. To my wife Sandy; quite possibly, the most supportive wife in the world - you deserve the lion's share of recognition as you have sacrificed more than I have without ever complaining. You are simply the best and I share this with you.

For their unconditional support and teaching persistence, this work is dedicated to my parents, Norm and Delores.

I. INTRODUCTION

A. PROBLEM STATEMENT

Despite effective prevention and preparedness efforts, natural or manmade mass casualty incidents involving schools will occur in the U.S. Yet, there remains an apathy and lack of commitment to prepare children for the disaster's aftermath and the consequential psychosocial impact on society as a whole in the U.S.

The events of 9/11 demonstrated the vulnerability of soft targets from asymmetric terror attacks, including schools. Relatively new to modern day terrorism, Americans are still unaware of how far terrorists are willing to go to inflict large body counts and dramatically affect the psyche of American society. No place is this vulnerability greater than in America's schools, which is why coupled with the uncertainty of terrorism attacks, schools should prepare to minimize terrorism affects on the school population. One thing is certain: our schools are vulnerable with 53,000,000 plus children – 20 percent of the total U.S. population attending school or day care.¹

Of primary importance is providing students, school administrators, and the community as a whole, the tools to cope with disasters if they occur. The importance of researching preventative efforts cannot be underscored and seeking ways to improve emergency drills, plans, and target hardening of schools is encouraged. However, the aim of this thesis is to identify preparedness strategies that will aid in the response and recovery of mass casualty incidents, whether they originate from the terrorist, the deranged gunman, or natural threats, including fires, floods, tornadoes, hurricanes, or pandemic outbreaks. Children and the schools they attend remain soft targets whether or not the threat is intentional.

¹ *School Safety in the 21st Century: Adapting to New Security Challenges Post-9/11. Report of the Conference Schools: Prudent Preparation for a Catastrophic Terrorism Incident*, (Washington, D.C.: George Washington University, 2004), <https://www.llis.dhs.gov/docdetails/details.do?contentID=25708> (accessed August 29, 2007).

B. RESEARCH QUESTIONS

Research questions will determine the threat, consider the impact and strengthen preparedness. The research will follow the continuum of questions.

- What is the multitude of threats that schools may encounter?"
- What are the critical variables commonly found with school disasters?
- What are the anticipated psychosocial consequences of incidents involving schools?
- Can the promotion of resiliency aid schools during the preparedness, response, and recovery phases of a mass casualty incident?

C. LITERATURE REVIEW

Primary sources reviewed include official governmental reports and documents to support case studies and interview material. National and international case studies add to the literature on the topic by assessing the threat, the experience, the impact and the preparedness of U.S. schools. Secondary sources demonstrate the current literature on the topics, including books, scholarly journals, and opposing viewpoints. This thesis explored research from numerous vocations that have an impact on the issue of school preparedness, incident response, and the need for attention to psychosocial recovery. Literature from the fields of emergency services, education, foreign government practices, and social psychology with an emphasis on children were reviewed.

Government reports include the *Townsend Report* that explored the aftermath of Hurricane Katrina, and governmental survey of Toronto area residents following the SARS scare. After action reports were developed after the Our Lady of the Angels fire (NFPA), and shootings at Platte Canyon, Columbine, and VTU. The Federal Emergency Management Agency (FEMA), the U.S. Department of Homeland Security (DHS), and the International Association of Emergency Managers (IAEM), recommend an “all hazards” approach. Such an approach requires schools to examine threats that range from low to high consequence. Planning, training, and conducting exercises must be integrated

into a school's and community's emergency response plans.² U.S. government reports may suffice as a corroborating link to the terror experience that others have experienced abroad.

Textbooks, including *The Trauma of Terror, Jane's Safe Schools, and Psychology of Terrorism*, compiled writings of numerous experts that provided a broad spectrum of analysis on the physical and psychological aspects of terrorism. They also presented perspectives on other forms of violence and natural disasters that often concluded with recommendations towards an all hazards model of preparedness.

Relevant to the approach exercised in the research process was the fact that prevention is not always an option with regard to manmade and natural disasters. Markenson, et al., understood this same approach in the aftermath of 9/11 with their *Uncommon Sense, Uncommon Courage* report on the New York Board of Education's focus on response, and most importantly, recovery. Focusing on the response and recovery allows prevention and preparedness to be woven back into consideration.³

The psychosocial and psychological impacts of mass casualty incidents were primarily found in journals in the field of social science. Data was gleaned from recognized centers including the American Psychiatric Association, the National Center for PTSD, the American Academy of Pediatrics, and the Heritage Foundation. Journals focused on school safety and lessons learned from previous school tragedies. The examination of resilience has been explored by numerous authors including Rohan, Flynn, Cai, Buckle, Peek, and Markenson.

With their numerous experiences as disaster victims, the psychological strengthening through resilience has helped nations such as the United Kingdom and Israel in the recovery process. International models can teach a great deal because of

² School Safety in the 21st Century: Adapting to New Security Challenges Post-9/11. Report of the Conference Schools: Prudent Preparation for a Catastrophic Terrorism Incident, 7.

³ Markenson, David, Anne Degnan, and Gregory Thomas. *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*. Columbia University: Columbia University. Joseph L. Mailman School of Public Health, December 2004, http://www.ncdp.mailman.columbia.edu/files/9_11reportASSESSMENT.pdf (accessed November 12, 2007), 4.

their personal experience with terrorism and international case studies were referenced for school preparedness. International literature primarily focused on the impact of terrorism on specific populations, including children and an emphasis on societal psychological resilience. In fact, resilience was a common theme in many readings. The relationship between terrorism and school attacks is scarcely mentioned, except for Israeli incidents that could no longer be ignored and the Beslan, Russia massacre. Israeli academia has looked at youth and school violence for more than 30 years. Still, many in Israel did not believe school violence was a serious issue until the late 1990s.⁴

Other studies have looked at the development of posttraumatic stress disorder (PTSD) in post-terror victims. A long-term follow-up study of adolescent survivors of a 1974 terrorist attack in Israel indicated that the adjustment in adult years was mediated by the extent of the injuries experienced. Seventeen years after the incident, the severity of injuries was positively associated with the symptoms of post-traumatic stress. Four years after the 1995 sarin gas attack in Tokyo's underground system, more than half of the survivors still had symptoms consistent with PTSD.⁵

In Northern Ireland, a study was conducted on children's stress in relation to their actual exposure to political violence. A significant correlation was observed between exposure to political violence and manifest anxiety. Specifically, children were more likely to report symptoms of anxiety when their friends or relatives were injured or killed as a result of the troubles or when they perceived their area to be unsafe.⁶

The psychological phenomenon of forgiveness aided in the process of recovery in the Amish community following the shooting at West Nickel Mines, Pennsylvania and

⁴ Rami Benbenishty, Ron Avi Astor and Roxana Marachi, "A National Study of School Violence in Israel: Implications for Theory, Practice and Policy," in *Handbook of School Violence and School Safety: From Research to Practice*, eds. Shane Jimerson and Michael Furlong (New Jersey: Lawrence Erlbaum Associates, 2006), 483.

⁵ Enrique Baca and others, "Short and Long-Term Effects of Terrorist Attacks in Spain," in *The Trauma of Terrorism: Sharing Knowledge and Shared Care, an International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 157-167.

⁶ Andrea Campbell, Ed Cairns and John Mallett, "Northern Ireland: The Psychological Impact of 'the Troubles,'" in *The Trauma of Terrorism: Sharing Knowledge and Shared Care, An International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 177-178.

also in Northern Ireland during “the troubles” as stated by Kraybill and Campbell. The ability to forgive is not fully understood or accepted, especially by victims of intentional harm. Still, the application of forgiveness is explored as it has helped particular communities heal.

Tertiary sources were utilized from archived newspapers, magazines, and film. The historical perspective of mass casualty incidents relied largely on action reports, school safety experts, a digital video titled *Angels too Soon* that chronicles the Our Lady of the Angels school fire, a journal review, and government documents reports.

The Homeland Security Digital Library (HSDL), the Dudley Knox Library, and the Lessons Learned Information Sharing (LLIS) were the primary web resources. For the chronological review of past school incidents, archived articles from the New York Times were of assistance.

It is important to keep clear the distinction between school violence and terrorism. There is ample literature on school violence and how to mitigate and plan for its occurrence. Comprehensive literature on America’s experience with terror may prove difficult. Research found that some authors consider the threat of terrorism or school violence as overblown hype. Incidents that do occur are isolated and the overreaction from the legal system, media, school officials, the public and elected officials, creates more reactive problems than is warranted.⁷

There is literature that suggests the likelihood of a school shooting or a terrorism event occurring is overblown. Some do not believe it is necessary to implement new plans for schools that are terrorism specific or even worry about school violence. Media hype exacerbates people’s fears about the safety of their children in schools, which leads to misdirected public policy intended to safeguard the schools. Politicians have attempted to remedy the “crisis” by posting additional police officers in schools. Children face a one in a million chance of being killed at school and research shows that

⁷ Elizabeth Donohue, Vincent Schiraldi and Jason Zeidenberg, “School House Hype: The School Shootings, and the Real Risks Kids Face in America,” *Center on Juvenile and Criminal Justice* (1998), <http://www.cjcj.org/pubs/schoolhouse/> (accessed September 3, 2007).

the numbers of school shooting deaths have declined slightly since 1992. In fact, the number of children killed by gun violence in schools is about half the number of Americans killed annually by lightning strikes.⁸

This position can be challenged since experiencing Columbine, Beslan, Virginia Tech, Dunblane, Bailey, West Nickel Mines, and numerous other events since the article. This author believes the intent of the article is to guard against over regulation, and increased liability for absurd misinterpretations of zero-tolerance and other vague policies that means something different to individual districts or teachers. The added bureaucracy may increase the threats to schools they are meant to protect against.

One area that needs to be addressed is how to include the terrorism awareness and preparedness component into the school preparedness curriculum. Disturbing enough is the increase in school violence from lone shooters, let alone the idea that terrorists would target U.S. children's schools. A great deal of literature addresses school violence, but research on schools specifically targeted by terrorists has been mostly limited to the authors of *Terror at Beslan* (John Giduck), *Innocent Targets* (Chris and Michael Dorn), and *Stop Teaching our Kids to Kill* (David Grossman).

The psychological component of terrorism creates a fear factor for parents and their children that must be considered. Schools can better protect their students and the entire school population by collaborating with public health and other first responder disciplines to promote psychological resilience. Resilience is the ability to withstand loss or damage and possessing the ability to recover from the impact of the emergency or disaster. The higher the resilience, the less likely damage may be, and the faster and more effective recovery is likely to be.⁹

The epitome of resilience can be found in many stories of 9/11, but none more poignant than with the passengers of Flight 93 from Boston to San Francisco. Armed

⁸ Donohue, Schiraldi and Zeidenberg, "School House Hype: The School Shootings, and the Real Risks Kids Face in America."

⁹ Philip Buckle and Eve Coles, "Developing Community Resilience as a Foundation for Effective Disaster Recovery," *Australian Journal of Emergency Management* 19, no. 4 (November 1, 2004), <http://www.ag.gov.au/agd/EMA/emaInternet.nsf/Page/AJEM#current> (accessed April 16, 2008), 8.

only with knowledge that the previous three planes passengers did not have, the Flight 93 passengers were able to accomplish what the military and government could not; stop the terrorists from their intended target-most likely the U.S. Capitol or the White House. The duty of the federal government is to “provide for the common defense,” which was in fact protected that day by one thing alone: an alert and heroic citizenry.¹⁰

Countries outside of the U.S. have long accepted resilience as a strategy to strengthen their citizenry. The multitude of school threats makes disasters impacting schools inevitable, even if disasters are rare. The consideration of all hazards threats demonstrate the need for well-developed planning for school-based mass casualty events.¹¹ In the manner that the outcome of numerous deadly fires changed through aggressive fire prevention education, the U.S. should adopt resilience as a strategy to deal with all-hazards.

The main disagreements on the threat are primarily based on events that have yet to occur and the likelihood that they ever will. At this point, there is a lack of research discovered in dealing with specific threats to U.S. schools from terrorists abroad. Without crying wolf, threats against Americans are nothing new but asymmetric targets including children need to be considered after 9/11.

While no one is likely to argue against the value of resilience, there may not be a need to look outside U.S. borders to identify it. Flynn maintains that U.S. resilience has always existed as evidenced by U.S. founding and U.S. sustainability through wars, disease, economic downturns, and numerous other challenges. The point is whether Americans recognize the value of promoting resilience. Flynn addresses a relevant question that the 9/11 Commission failed to examine: might the passengers on the other three planes reacted differently if they were aware of the terrorists’ intentions? Evidence over the years before the attack had revealed an interest by terrorists in using passenger

¹⁰ Stephen E. Flynn, “America the Resilient. Defying Terrorism and Mitigating Natural Disasters,” *Foreign Affairs* 87, no. 2 (March/April 2008), <http://opim.wharton.upenn.edu/risk/> (accessed April 16, 2008), 4.

¹¹ James Graham and others, “Mass-Casualty Events at Schools: A National Preparedness Survey,” *Pediatrics. Official Journal of the American Academy of Pediatrics* 117 (2006), <http://www.pediatrics.org/cgi/content/full/117/1/e8> (accessed January 21, 2008), e8-e15.

airliners as weapons. This information was considered too sensitive for the public and never shared. “What if” scenarios ask if the information had been widely publicized, would the passengers on the first three planes acted differently?¹²

D. METHODOLOGY & SIGNIFICANCE

Research methodologies to answer research questions and reach the recommendations found in the final chapter include case studies, interviews and conference proceedings.¹³ The focus will be on appreciative inquiry and promoting a collaborative effort to understand the threats, the process of recovery, and the promotion of resilience.

Chapter II examines the natural and intentional threats that schools face. Specific incidents such as the Our Lady of the Angels fire, and the Columbine massacre raised greater awareness and resulted in dramatic changes to policy - often at the national level. In the early twentieth century, fires and natural disasters constituted the largest threat and killed most student victims. Natural disasters continue to be a threat as evidenced by Hurricane Katrina and the severe acute respiratory syndrome (SARS) outbreak. However, recent school shootings and terrorism events have overshadowed natural threats because of the increased fear from intent and unknown time of occurrence. In the latter part of the century, school shootings became mainly a U.S. phenomenon and the targeting of schools is no longer off targets for terrorists. Most threats share commonalities whose trend could be expected to continue with future events if schools fail to learn from the past.

Terrorism threats involving schools have been made verbally against American children though they have never been specific. Actual terrorist attacks have occurred in other countries. The main disagreements on the threat are primarily based on events that have yet to occur and the likelihood that they ever will. At this point, research discovered

¹² Flynn, “America the Resilient. Defying Terrorism and Mitigating Natural Disasters,” 4.

¹³ Author John Giduck presented the “Terror at Beslan” conference in August 2007 in Clarkston, Michigan from his book of the same name.

in dealing with specific threats to U.S. schools from terrorists abroad is lacking. A segment of research found dealing with the outside threat considered the idea of schools being a terrorist target as hype and dismissed the likelihood of occurrence.¹⁴

Chapter III examines case studies and provides a threat analysis based on the history of incidents involving schools and continues by examining case studies from a multitude of threats, specifically fire, school shooters, and terrorism targeting schools. The research progresses from the event phase of disasters to consideration of the psychosocial consequences of disasters on children and their families, the school and community, and the first responders. Whether mass casualty incidents are natural or intentional in origin, there are often similar variables that contribute to scene mitigation success or failure. Case studies include the fires at Collinwood and the Our Lady of the Angels schools and the explosion at the New London School in Texas. Man-made or intentional case studies look at the shootings at Springfield, Oregon, Littleton and Bailey, Colorado, the Amish school in West Nickel Mines, Pennsylvania, the college shootings at Virginia Tech and Northern Illinois Universities, and the terrorist attacks at Ma'alot, Israel and Beslan, Russia.

Chapter IV breaks down five critical variables commonly found in most case studies. They are: (1) time criticality, (2) information sharing, (3) information sharing, (4) security, and (5) first responder readiness. There are significant proximal threats that have occurred in the U.S. that placed schools or their population in harm's way. The Oklahoma City bombing, the 9/11 attack, Hurricane Katrina, and the severe acute respiratory syndrome (SARS) scare in 2003, are examined for their impact on the community.

Interviews by telephone were conducted with survivor Michael Mason, who as a first-grader, survived the Our Lady of the Angels fire; Littleton Fire Chief William Pessemier (retired), who served as the fire department's incident commander at Columbine; and, nationally recognized school safety expert, Dr. Scott Poland from Nova

¹⁴ Donohue, Schiraldi and Zeidenberg, *School House Hype: The School Shootings, and the Real Risks Kids Face in America*, September 3, 2007.

Southeastern University. Personal communications were initiated with Division Chief Dave Walcher of the Jefferson County Sheriffs Office who served as the law enforcement incident commander at Columbine.

Chapter V examines the psychosocial elements of disasters and their resultant impacts. The conditions of posttraumatic stress disorder (PTSD) and panic are examined within the context of likelihood following disasters and how to minimize their occurrence. First responders will also experience the effects of trauma and their needs should be considered. Critical Incident Stress Debriefing (CISD) is a common tool used in the recovery process from traumatic incidents. It is not without controversy.

Chapter VI will define resilience as a strategy to empower school communities and minimize impact. Israel and the United Kingdom (UK) have adopted the concept of resilience and applied it to aid in a community's recovery. The final chapter will recommend promoting resilience in schools to minimize the psychological impacts of mass casualty incidents.

Consumers of this research include school administrators and faculty, public and mental health professionals, and first responder leaders. Schools across the country in urban and rural populations have been subject to mass casualty incidents. When looking only at the threat of natural disasters, 90% of the country lives in moderate to high hazard areas, vulnerable to high winds, earthquakes, flooding, hurricanes, volcanic eruptions, or wildfires.¹⁵

Consistent characteristics include the fact that school officials will be the initial first responders. Aside from the parents, they will also have the most contact with children and be an important cog in the child's recovery, long after traditional first responders have left the scene. Schools can benefit through the development of an applicable model focusing on recovery and the promotion of resilience. The actions of teachers, custodians, school resource officers (SROs), school nurses and other support staff have played critical roles in response and scene mitigation. Through the actions of

¹⁵ Flynn, "America the Resilient. Defying Terrorism and Mitigating Natural Disasters," 3.

individuals and of the group, school faculty has the power to influence the student by demonstrating leadership and calm in times of crisis. These actions have often meant the difference between life and death.

Homeland Security practitioners from first responder communities can learn the lessons from previous incidents involving schools that have exposed first responder vulnerabilities and shortcomings. Establishing pre-event relationships primarily from the public health and law enforcement arenas with school officials and crisis response teams (CRTs) will help establish the importance of pre-event relationships.

Public health has an often misunderstood role in preparedness and recovery. Whether the threats are natural or intentional, and especially for public health emergencies, they are an integral component of the first responder system. For community resilience, no other first responder discipline is better suited to promote resilient practices. There is an education of other first responder disciplines required to understand the importance of melding public health.

During school disasters, law enforcement will have numerous complex situations to manage. First, they will not have the initial resources to handle the quick assembling crowds, including the media. A common problem that will result in public and media scrutiny, if not handled properly, are the security issues that include the ability to establish crowd perimeters and control. Coupled with the crowd control issue will be the problems with family reunification that will add to the already present anxiety.

Future researchers can apply preparedness and recovery principles not only for terrorism events, but for any school violence incident. Further benefit can be derived for those charged with protecting soft targets, including places of assembly, shopping malls, and places of business focused on operational continuity.

E. CHAPTER SUMMARY

Society considers schools as safe havens where there is comfort in sending children on nearly a daily basis. The fact remains that schools are largely unprotected and school populations are vulnerable to numerous threats. While terrorism has become

the worst of all fears, schools must consider all hazards. Terrorism is just another component that schools must prepare for, not because of the motive behind the act, but because of the impact of the event.¹⁶

Response and recovery will be affected by the mass casualty mechanism and those differences will be explored. However, the underlying theme to the argument is that psychosocial consequences, regardless of intent, may be significant and should be give due diligence to promote the proper intervention strategies.

Promoting a resilient nation does not require reinventing the wheel. When looking at successful models in the U.S., fire prevention education is a successful paradigm shift that was ignored for decades until a tragedy in 1958 that left scores of children dead at a Chicago elementary school. Existing preparedness models that have been successful in the U.S. and in other nations considered resilient can be utilized by schools. Integration with public health and law enforcement communities are a key to successful implementation of successful resilient strategies.

¹⁶ Michael Dorn and Chris Dorn, *Innocent Targets - when Terrorism Comes to Town*, (Safe Havens International, 2005), xxvi.

II. EXISTING MASS CASUALTY THREATS

This section will provide an overview on the mass casualty threats that have adversely impacted schools. Webster's defines threats as an expression of intention to inflict evil, injury, or damage; one that threatens; or, an indication of something impending.¹⁷ There are a multitude of threats by which schools can suffer manmade or natural mass casualties, and in either case, children will be the most vulnerable. These events will create vast emotional trauma and be the most difficult crisis to which it is possible to respond.¹⁸ They do not have to be the specific target to cause the adverse impact on the education system, the students, and the at-large support system of the family and community.

In the weeks following a major crisis, many children are afraid to return to school. To the child experiencing the trauma, the terror they feel is real whether the source is an approaching tornado, an armed gunman, the class bully, or the media reporting potential attacks. Many of the reactions and coping mechanisms will be similar regardless of accepted terror definitions. Attendance can expect a 25 – 30 percent decrease in the student population in the first weeks following a violent incident or disaster.¹⁹

The potential for mass casualties could arise from a weapons assault, influenza pandemic, kidnapping/abduction, hostage situation, bus accident, natural disasters, mass contamination, bomb threats, explosions, hazardous materials incidents, or a transportation accident.²⁰ In general terms, they all qualify as natural or manmade events, and the acts are either deliberate or involuntary.

¹⁷ Merriam-Webster's Dictionary.

¹⁸ Mike Dorn and others, *Jane's Safe Schools Planning Guide for all Hazards*, 1st ed. (Coulsdon, UK: Jane's Information Group, 2004), 292.

¹⁹ Ibid., 292.

²⁰ Ibid., 199.

In recent years, the focus has been on the high profile, mass media events of direct targeting terrorism attacks in Beslan, Russia, or the numerous school shootings in both urban and rural parts of the U.S. Less newsworthy, but so far, more consequential, have been the natural disasters that have affected schools.

A. NATURAL THREATS

In the past, U.S. vulnerability has been greater because of natural disasters and they have caused death to hundreds of children in the school setting. Fires in the context of this thesis will be defined as a natural threat though the cause and origin of the fire may have been the intentional act of arson. Fire is a natural phenomenon that can threaten schools through natural causes such as natural gas explosions (New London, Texas) or wildfires. They are included here because they have played a significant role in America's history, causing hundreds of deaths in schools. During the first half of the 20th century, school fires in this country were mass killers. In the period 1907 – 1957, there were 36 fatal school fires in the U.S., killing 726.²¹ Tornadoes have caused numerous deaths and injuries to students. The deadliest came in April 1967 at Belvidere High School in Illinois when an F-4 tornado struck as buses that had already picked up the elementary school children and were loading the high school students. Thirteen of the 24 fatalities and 300 of the 500 injured occurred at the high school as 12 buses were rolled over and students were flung like leaves into the muddy field. This was the nation's sixth worst school death toll from a tornado.²²

For at least a century, America's most severe natural disasters have become steadily less deadly and more destructive of property. Hurricane Katrina contradicted this trend and proved that natural disasters are not just events causing mass casualties of days gone by. In fact, their future occurrence is certain, including pandemics. Hurricane Katrina caused the most damage in U.S. history impacting over 93,000 square miles across 138 parishes and countries. It was also the deadliest natural disaster since

²¹ Ed Marek, "Teachers, Students, Neighbors Rising to Great Acts of Heroism, the Tragedies of Deadly School Fires," www.talkingproud.us/Education040206.html (accessed July 23, 2008).

²² Jim Allsopp, "40th Anniversary of Northern Illinois' Worst Tornado Disaster," (2007), www.crh.noaa.gov/Image/lot/severe/21Apr1967_tornado.pdf (accessed March 19, 2008), 8.

Hurricane San Felipe in 1928.²³ Currently, nine out of ten Americans live in locations that place them at a moderate to high risk of experiencing damaging high wind, earthquakes, flooding, hurricanes, volcanic eruptions, or wildfires.²⁴

There are few threats that scare the public as much as the outbreak of a pandemic disease and for good reason. Recent scares such as the avian flu and the severe acute respiratory syndrome, better known as SARS, expose society's vulnerabilities to a large-spread outbreak. In the last 300 years, there have been ten pandemics with three in the 20th century and they are inevitable. The Spanish Influenza of 1918 killed 50 to 100 million including over 500,000 deaths in the U.S. Even with medical advances, the anticipated pandemic cases would exceed the surge capacities of hospitals. Vaccines would take months to develop after the initial spread of the disease, and scientists estimate that the vaccine would be available to 4 million people worldwide. Given that there are 3 million people in the U.S. alone, a large portion of the population will be unprotected.²⁵

The guarded reaction to a pandemic will require physical isolation, or social distancing from the public. Challenges will include balancing the isolation with the need to communicate and connect with the outside world. Also, the issue of family reunification will be prominent with health emergencies. Fear should be expected as a natural reaction when social distancing is in place. Remaining connected to the community is imperative to minimize loss of life from poor communication or misinformation. Reports from the CDC reveal the lack of U.S. preparedness when the

²³ Francis Townsend, "The Federal Response to Hurricane Katrina: Lessons Learned," in *Multi-Discipline Approaches to Homeland Security*, Cohort 0701/0702. Winter 2008 ed. (Monterey, CA: Naval Postgraduate Schools, 2006), 1-74, 5-7.

²⁴. Flynn, "America the Resilient. Defying Terrorism and Mitigating Natural Disasters, 3.

²⁵ Francisco Cai and others, *Community Resiliency through Schools. Social Innovation and Entrepreneurship: Saving Lives in the Next Pandemic*, (Stanford University, June 7, 2007), http://sie.stanford.edu/1/reports/community_resiliency.pdf (accessed April 17, 2008), 2.

next pandemic occurs. According to the CDC, 45% of all single parent households will not have anyone on which to rely, and 35% of households with children will experience some form of hardship when the schools are closed.²⁶

When looking at public health emergencies and other natural disaster threats, their occurrence is largely predictable. For this reason, the public may feel a false sense of security, believing they can prepare immediately before or as events unfold. Previous school disasters and even those in close proximity have taught Americans how to prepare for recovery and continuity. Having the knowledge is not the same as taking the necessary precautions to mitigate impact. One arena where schools have largely heeded the warnings comes from the uniquely American threat of school shootings.

B. SCHOOL SHOOTINGS IN THE UNITED STATES

Manmade threats are those that are most often deliberate and come without warning. Though the vast majority of students go to school daily without incidence, school violence incidents are highly emotional events that have occurred in rural and urban areas in all parts of the U.S. In the last decade, American children have been victimized by increased acts of violence at schools.

Since 1974, there have been over 80 reported school attacks worldwide and most of those have occurred in the U.S. Of those attacks, a large majority resulted in casualties, mostly from shootings where the perpetrators were young teenagers. Other common characteristics found that most of the perpetrators were from the community where the attacks took place. The attacks have been spread throughout the U.S. and a large number have occurred in small communities.²⁷

One of the consequences of school shootings is that they receive intense media coverage that can result in copycat crimes elsewhere. Anecdotal evidence suggests that the copycat phenomenon is frequent and threats increase in schools across the country

²⁶ Cai and others, *Community Resiliency through Schools. Social Innovation and Entrepreneurship: Saving Lives in the Next Pandemic*, 3.

²⁷ Michael Dorn and Chris Dorn, *Innocent Targets: When Terrorism Comes to Town*, (Safe Havens International, 2005), 31-32.

after a highly publicized school shooting. The days, weeks, and months following a school shooting is a critical time for students, teachers, and law enforcement to become more vigilant in noting disturbing student behavior.²⁸

Even with high profile shootings within the last 16 months at Virginia Tech University (VTU) and Northern Illinois University (NIU), shootings at universities are rare events, averaging about 16 a year across 4,000 institutions.²⁹ There are many differences, yet many commonalities between violent events at college campuses and grade schools. The most prominent difference is the increased vulnerability of the very young and the emotional impact such attacks would inflict. College campuses are considered businesses that are not required to perform fire drills, or any emergency drills for that matter, unless mandated by an internal policy. Grade schools are usually regulated by the states that require compliance with emergency fire, lockdown, and severe weather drills. Still, university shootings that occurred at VTU and Northern Illinois universities provide lessons that can be applied to faculty, first responders, and students at all levels.

The analogy to elementary schools is not very useful as the threat in elementary schools are usually not from students, the classrooms often have locks, and have voice communication systems for teachers and students, and the at risk population is in one building, and not the 131 buildings like at VTU.³⁰ The same holds true for high schools, except for the profile of the perpetrator. Similar to college campuses, it is very common for the perpetrator of a shooting at a high school to be a student.

Schools have shown a tendency to adopt a one-size-fits-all approach to any mention of violence. This considers all threats the same, but it may underestimate legitimate threats or overreact to non-credible threats. The danger is that students may be unfairly punished or stigmatized when they are not dangerous. Abraham Maslow stated,

²⁸ O'Toole, Mary Ellen, PhD., *The School Shooter: A Threat Assessment Perspective* (Quantico, VA: U.S. Department of Justice, Federal Bureau of Investigation, (2005), 4. <http://www.fbi.gov/publications/school/school2.pdf> (accessed April 10, 2008).

²⁹ Mass Shootings at Virginia Tech, April 16, 2007, *Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, (Virginia: Virginia Tech Review Panel, August 2007), 18.

³⁰ Ibid., 83.

“If the only tool you have is a hammer, you tend see every problem as a nail.” Schools that treat all threats as equal fall into this fallacy. Schools need to recognize that not every threat represents the same danger, requiring the same level of response.³¹

Society needs to consider the worst of all fears – the threat of terrorism in America’s schools. Serious preparation absent of histrionics will allow schools to incorporate terrorism preparedness as part of an all-hazards approach. Terrorism attacks on schools have occurred elsewhere in the world. Are terrorists willing to target the U.S.?

C. TERRORISM

Though the chances of terrorism occurring are reduced from other mass casualty threats, there is evidence that the long-term impact of terrorism will understandably be much greater. There has not been a catastrophic terrorism incident within the U.S. since September 11, 2001, though not from a lack of effort. According to the U.S. Code, Section 265(d), the goal of terrorism is “premeditated, politically motivated violence perpetrated against non-combatant targets by subnational groups...intended to influence an audience.”³² The act of terrorism itself is designed to create chaos and a pervasive fear of the unknown, unpredictable, yet intentional threat.³³

Exploring terrorism from a psychosocial perspective reveals the true goal of terrorism is to cripple by fear and grief. Military psychologists have long known that fear, stress, and exhaustion will cause more casualties than bombs and bullets. For every death during the SCUD missile attacks on Israel during the Gulf War, there were 272

³¹ Mike Dorn and others, *Jane's Safe Schools Planning Guide for all Hazards*, 1st ed. (Coulsdon, UK: Jane's Information Group, 2004), 450.

³² Jonathan Comer and Philip Kendall, “Terrorism: The Psychological Impact on Youth,” *Clinical Psychology: Science and Practice* 14, no. 3 (September 2007), 179, <http://dx.doi.org/10.1111/j.1468-2850.2007.00078.x>, (accessed July 9, 2008).

³³ Larry E. Beutler and others, “The Need for Proficient Mental Health Professionals in the Study of Terrorism,” in *Psychology of Terrorism*, eds. Bruce Bongar and others (New York: Oxford University Press, 2007), 34.

hospital admissions resulting from clinical psychological emergencies. After Aum Shinrikyo's use of sarin gas on the Tokyo subway system where only 12 died, 4,000 nonaffected individuals were treated at area hospitals.³⁴

When considering the terrorism threat to America, the enemy in the Global War on Terror has shown patience and attention to detail between operational attacks and ruthlessness unlike any enemy of the past. Potential fallout for future consideration is the asymmetric attack methods of U.S. enemies; not against the U.S. military, but by targeting America's most vulnerable locations and population.

The year 1968 began what is generally considered the start of modern day terrorism when militant Palestinian groups concluded that attention to their situation was insufficient. Palestinian tensions escalated to target Israeli populations deliberately including children, schools, and school buses.³⁵

Buses are an extension of the school system and largely vulnerable to attack. They have been popular terrorist targets for years, particularly in Israel. On May 8, 1970, Palestinian terrorists crossed the Lebanese border into the small agricultural community of Avivim. Knowing the schedule of the two school buses, terrorists ambushed a bus, killing the adults and the bus driver causing the bus to crash. The attack caused the death of nine children from the ages of six and nine, and three adults. Many others were injured and the terrorists were never apprehended.³⁶ Buses travel over significant distances and efforts to protect the large number of buses stretch resources, regardless of which government, to the limit.³⁷

³⁴ Bruce Bongar, "The Psychology of Terrorism. Defining the Need and Describing the Goals," in *Psychology of Terrorism*, eds. Bruce Bongar and others (New York: Oxford University Press, 2007), 5-6.

³⁵ Dennis Pluchinsky, "Ethnic Terrorism: Themes and Variations," in *The Unconventional Threat to Homeland Security* (Monterey, CA: Naval Postgraduate School, 2005), 35-42.

³⁶ "What Happened at Ma'Alot, Kiryat Shmona, and Other Terrorist Targets in the 1970s?" http://www.palestinefacts.org/pf_1967to1991_terrorism_1970s.php (accessed May 3, 2008).

³⁷ Dorn and others, *Jane's Safe Schools Planning Guide for all Hazards*, 33.

Over the years, the objective of terrorists has transformed from symbolic violence to increased brutalization and producing as many deaths as possible.³⁸ Since the 1970s, the terrorism experiences of numerous countries including Israel, Russia and Turkey have taught that children are not off limits as terrorism targets. Children and schools have been specifically targeted and children murdered, including the recent attack in March 2008 when eight people were killed and 11 wounded as a Palestinian terrorist armed with an M-16 concealed inside a television box opened fire in a crowded rabbinical seminary in Iraq, before being killed by an off-duty paratrooper.³⁹

The women and children killed at the Twin Towers and elsewhere during the September 11, 2001 attacks were not the targets, but the attackers considered them collateral damage along with the destruction of the symbols targeted in the attack. These motivations were not too different from Timothy McVeigh's in Oklahoma City six years earlier. Terrorist acts yield horrendous results in the media on a regular basis from Iraq, Afghanistan, and elsewhere. It is hard not to envision a worst-case scenario occurring in an American school as being only a matter of time.

In February 2002, British Prime Minister Margaret Thatcher assessed the U.S. post 9/11.

America will never be the same again. It has proved to itself and to others that it is in truth (not just in name) the only global superpower, indeed a power that enjoys a level of superiority over its actual or potential rivals unmatched by any other nation in modern times. Consequently, the world outside America should never be the same either. There will, of course, arise new threats from new directions.⁴⁰

Osama bin Laden's official spokesman, Suleiman Abu Gheith, stated in 2002, "We have the right to kill four million Americans—two million of them children—and to

³⁸ Bongar, "The Psychology of Terrorism: Defining the Need and Describing the Goals," 5.

³⁹ *Lessons Learned from Israel School Shooting* (Columbia, SC: South Carolina Information Exchange, (March 28, 2008), scielx@sled.sc.gov (accessed March 29, 2008).

⁴⁰ David Brannan and Stanley Supinski, "Multi-Disciplinary Approaches to Homeland Security Syllabus," (2008), <https://www.chds.us/courses/mod/resource/view.php?inpopup=true&id=25354> (accessed January 18, 2008).

exile twice as many and wound and cripple hundreds of thousands.”⁴¹ Shamil Basayev,⁴² the planner of the Beslan attack, justified the killing of children stating, “We regret what happened in Beslan. It’s simply that the war, which Putin declared on us five years ago, has destroyed more than 40,000 Chechen children and crippled more than 5,000 of them, has gone back to where it started from.”⁴³ A surviving teacher relayed the words of one terrorist who felt no remorse in killing children. “Russian children are killing our children in Chechnya, so we are here to kill yours.”⁴⁴ Gheith, Basayev, and their ilk rationalize killing children by perceived injustices against their own country or religion.

Despite the rhetoric of abu Gheith, Basayev, and their ilk, Islamists have yet to demonstrate they represent a threat to American schools on American soil. So far, al Qaeda appears to view both women and children as collateral damage in jihad and not specific targets.⁴⁵

There are still some unsettling issues that cause concern. In September of 2004 in Iraq, the U.S. military discovered a computer disk with downloaded data — all publicly available on the Internet. The disk contained a May 2003 Education Department report called “Practical Information on Crisis Planning: A Guide for Schools and Communities,” as well as photos and floor plans of certain U.S. schools.⁴⁶

The manner in how potential terrorist attacks will occur should be considered. Weapons of Mass Destruction (WMD) will threaten in the form of chemical, biological,

⁴¹ “Why we Fight America’: Al-Qa’ida Spokesman Explains September 11 and Declares Intentions to Kill 4 Million Americans with Weapons of Mass Destruction,” Middle East Media Research Institute, no. 388 (2002), <http://www.memri.org/bin/articles.cgi?ID=SP38802> (accessed October 25, 2007).

⁴² On July 11, 2006, the Chechen website KavkazCenter.org reported that the previous day Shamil Basayev had been “martyred” by the Russians.

⁴³ Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 44.

⁴⁴ Michael V. Uschan, *The Beslan School Siege and Separatist Terrorism* (Milwaukee, WI: World Almanac Library, 2006), 7.

⁴⁵ Eric Shoemaker, “Terrorism in American Schools: The First of all Fears. Confronting Violence in our Schools: Planning, Response, and Recovery,” (2007), http://www.riskinstitute.org/NR/rdonlyres/88BB8397-1BA9-4ED0-8B15-8B9377CCB1F6/0/Shoemaker_TerrorisminAmericanSchools.pdf (accessed August 19, 2007).

⁴⁶ Ben Feller, “Computer Disc found in Iraq Contained U.S. School Plans,” *USA Today* (October 7, 2004), <http://www.usatoday.com/news/world/iraq/> (accessed December 2, 2007).

radiological, nuclear, and explosives (CBRNE). Whether the CBRNE event is intentional or an accidental chemical release in close proximity, schools should be aware of their surrounding threats.

Chemical events are likely to produce immediate symptoms that will summon emergency services to the vicinity, as people will be affected within seconds or minutes. Inexpensive, and easier to acquire than biological weapons such as anthrax and smallpox, chemical weapons are still considered a low probability, but high impact for use as a mass casualty weapon. In 1995, the terrorist group known as Aum Shinriko dispersed Sarin nerve gas on the Tokyo subway system in a deadly attack that killed twelve.⁴⁷ Though it was poorly executed, the psychological impact was significant as thousands feared exposure and flooded hospitals.

Biological threats are more complex and more deadly. They have been used in warfare and there is serious concern over the security of the enormous stockpiles of biological agents, including anthrax and smallpox accumulated by the Soviet Union before its collapse. Mailing letters or packages containing dried or liquid biological agents, such as viral, toxin, bacterial, or rickettsial agents could carry out an attack on a school. After 9/11 and the subsequent anthrax scare, many schools rushed to add a Chemical/Biological response policy. Though their impact and the response required are dramatically different, many school districts have erroneously contained the two events into one policy.⁴⁸

Radiological attacks could come in the form of Radiological Dispersal Devices (RDD's) also known as "dirty bombs." Typically, RDD's would not release enough material to injure or kill many people, but the release alone would cause massive fear and panic and would render the targeted area contaminated and unusable until a costly cleanup is complete. The nuclear threat is highly unlikely though not impossible.

⁴⁷ The Aum Shinriko cult attack on Tokyo's subway system killed 12 people.

⁴⁸ Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 115-116.

Terrorists would most likely target a nuclear reactor, causing the release into the surrounding area. If a nuclear attack did occur, they would not have to target schools since the collateral damage to the entire region would be significant.⁴⁹

History has shown that the use of explosives is the most common device of the terrorist. Inexpensive and easy to acquire materials, bombs have been a useful tool in effecting change while creating mass casualties, usually civilian. With no practical experience or specific knowledge, the four British citizens responsible for the four nearly simultaneous July 7, 2005, bombings in London, made the bombs from homemade organic peroxide devices carried in backpacks. The March 2004 terrorist train bombings in Madrid, Spain was not the work of suicide bombers, but from bombs left in bags and backpacks and detonated by cell phones.⁵⁰

Though still the largest intentional killing of children in a school setting in U.S. history, the May 18, 1927 bombing of the Bath Consolidated School in Bath, Michigan is a largely forgotten incident. Andrew Kehoe, a 55-year old farmer and school board member, was angered at the school board for increased school taxes that he felt would result in him losing his farm. He had also lost his savings from paying for treatment of his wife's chronic illness. After killing his wife Nellie, and blowing up his own farm, Kehoe brought surplus dynamite from World War I, known as Pyrotol to the school. He then proceeded to detonate the explosives killing over 40 students and teachers, the school superintendent, and himself.⁵¹ Some may consider Kehoe's actions as a terrorist act, but with the absence of trying to effect social change as part of a larger movement or shared philosophy, it would not meet most definitions of terrorism.⁵²

⁴⁹ Craig Gjelsten, "Homeland Security Planning for Urban Area Schools," (Naval Postgraduate School), https://www.hSDL.org/homesec/docs/theses/08Mar_Gjelsten.pdf&code=42be6429e55d66881afeef1764a499dd (accessed April 9, 2008), 35.

⁵⁰ Martha Crenshaw, "The Organization of Terrorism," in *Terrorism: What's Coming? The Mutating Threat*, ed., James O. Ellis III (Oklahoma City, OK: Memorial Institute for the Prevention of Terrorism, 2007), 20-21, www.mipt.org (accessed October 19, 2007).

⁵¹ Shoemaker, *Terrorism in American Schools: The First of all Fears. Confronting Violence in our Schools: Planning, Response, and Recovery*, August 19, 2007.

⁵² Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 32.

Another component of terrorism is the taking of hostages. The adult American public considers the hostage taking of children as the terrorist act that produces the greatest psychological disturbance. This finding comes from two nationally representative samples of American adults (18 and over). The first sample was taken in late 2006 and included 2,200 individuals. The second replication sample experimentally manipulated the presence of children into various threats and it was the malevolent intent to harm children-not the harm to children as bystanders or collaterals that so upset the American public.⁵³

There is evidence that the hostage taking of children in schools is not the aim of perpetrators. An armed school invasion will require a different approach from law enforcement than conventional methods of the past. Some trainers in law enforcement suggest eliminating the term “hostage” when the innocents being held against their will are innocents in a school. Americans are naïve when it comes to school sieges. There will be a battle and people are going to die, including uniformed people such as police officers and firefighters. Large males and those that visibly demonstrate leadership will also be killed early in the siege.⁵⁴

Armed school intruders do not plan on holding hostages and bargaining for concessions. The term “hostage” leads to the next logical step for resolution – negotiation. Any opportunity of negotiation should not be afforded to homicidal and suicidal predators that specifically attack schools. They should be neutralized at the earliest opportunity, as their intent is to kill children before possibly taking their own lives. Early police contact is the key to saving lives.⁵⁵

To date, no U.S. schools have been the target of an international terrorist. Still, they remain vulnerable and viable targets for the following reasons:

⁵³ Personal email communication with Dr. James Breckenridge of Stanford University, on July 15, 2008, at the Naval Postgraduate School in Monterey, CA. The results will be published in a forthcoming article and his next book.

⁵⁴ Personal Communication with John Giduck, August 27, 2007.

⁵⁵ Rick Armellino, “School Invaders Don’t Take Hostages,” *Police One.Com* (November 5, 2007), http://www.policeone.com/pc_print.asp?vid=1355243 (accessed November 9, 2007), 1-3.

- An attack would instill fear and panic nationwide as they did with the Columbine attack.
- The reputation of the terrorist/group could be promoted.
- Schools provide essential community service with one-quarter of the nation's population attending daily.
- Domestic terrorists have directly attacked schools and schools were indirect victims on 9/11/01.
- An attack would warrant national media coverage.
- Schools symbolize America's future.⁵⁶

D. CHAPTER SUMMARY

Recognizing terrorism as a possibility in today's world does not mean that alarm bells should be sounding across the country. By first making schools aware of threats whether they have occurred in the U.S. or not, preparedness planning can occur for school districts and the emergency first responders. The intent of addressing the potential threats to schools is to learn from past disasters and look to the future in a proactive, not a reactive manner. The proverbial "sky is not falling" and the aim is not to be an alarmist. Burying our heads in the sand is not suggested either. The simple fact is that most schools are safe from the possibility of a terrorist attack, and other threats mentioned may only be slightly higher in probability. Otherwise, Americans would not send their children there on a daily basis.

A common theme is that no one expects the natural disaster, shooting, or terror attack to affect their school. It will always be the "other" school.⁵⁷ When the unexpected does occur, can school administrators and first responders answer that they were prepared, or even considered the possibility if an attack does happen? On an emotional

⁵⁶ *Safeguarding Schools against Terror* (National School Safety Center, January 1, 2004), http://www.schoolsafety.us/pubfiles/safeguarding_schools_against_terror.pdf (accessed January 12, 2008), 4.

⁵⁷ Interview with Bill Pessemier.

level, no matter how unlikely, and perhaps because an al Qaeda or Beslan-type attack on an American school or schools is so unthinkable, it becomes the first of all fears. However, just because something is unthinkable, does not mean it is likely.⁵⁸

Natural or manmade disasters represent similar characteristics, yet possess many unique challenges. The reality is that children, schools and first responders face the potential of being impacted by each. Most countries, including the U.S., have experienced other crises, such as explosions, ice storms, and earthquakes that have affected students and schools. All countries have schools that are “potentially” in harm’s way—schools are built next to nuclear power plants, next to railroad tracks, in the path of hurricanes, next to factories that manufacture explosives or explosive material.⁵⁹

Intentional threats expose the vulnerability and the inability to protect children while they are at school. They also become 24/7 media events that may exploit the victims, and in the case of criminal attacks, inflate the status of the perpetrators and often create copycat attacks.

Prevention and preparedness should be emphasized but the best laid plans will not prevent all school disasters. With the multitude of threats facing schools, an all-hazards approach to emergency planning is recommended. On one end of the continuum, they need to be prepared for weather, pandemics, and natural disasters. On the other end are the acts of manmade crime, violence and disasters. On a day-to-day basis, the most school administrators may deal with are aggressive behaviors, bullying, fighting, and related issues, but they must be prepared to manage the worst of circumstances.⁶⁰

⁵⁸ Shoemaker, *Terrorism in American Schools: The First of all Fears. Confronting Violence in our Schools: Planning, Response, and Recovery*, August 19, 2007.

⁵⁹ “International Meeting on Helping Schools Prepare for and Respond to Terrorist Attacks,” (Organization for Economic Cooperation and Development, February 13-14, 2002), <http://www.oecd.org/dataoecd/44/52/2757445.pdf> (accessed January 22, 2008).

⁶⁰ Email communication with Kenneth Trump on July 15, 2008.

What is not needed are more federal research, conferences, symposiums, gatherings, advisory groups, panels, commissions, hearings, manuals, guides, templates, and regurgitation of best practices.⁶¹ The next chapter will examine incidents that have critically impacted schools, whether the event was a natural disaster, or intentionally meant to harm children at school.

⁶¹ Homeland Security, *Protecting our Schools: Federal Efforts to Strengthen Community Preparedness and Response*, 1, Congress #110 sess., 2007.
<https://www.hSDL.org/homesec/docs/testimony/nps30-052107-06.pdf&code=236f28f1735ad8546c63ce14eb8064da> (accessed August 29, 2007), 5.

THIS PAGE INTENTIONALLY LEFT BLANK

III. CASE STUDIES – MACRO VIEW CHRONOLOGY OF MASS CASUALTY INCIDENTS

The following mass casualty incidents are landmark events primarily involving schools. The tragedies are different in nature yet share many commonalities that schools and communities should consider, regardless of the mechanism of threat. The introduction provided here is a macro-view background and represents just a small sample of events that have occurred affecting schools. The primary focus is on U.S. incidents though disasters from abroad were included since they may have implications for the U.S., such as terrorism attacks on schools. All received mass media attention, which translates to the conscience of societal importance. All reveal vulnerability from the school, first responder and community levels. Specific natural events were selected though many occurred a long time ago because they remain viable threats and teach many lessons still today.

If further evidence is needed, two significant natural disasters occurred in May 2008; the typhoon in Myanmar, and the earthquake in China - each killing 10,000. In 2004, the tsunami in the Indian Ocean killed over 225,000, and in the U.S., three years later, the U.S. is still attempting to recover from the devastation of Hurricane Katrina. This is a reminder that disasters do not always happen “over there.”

A. NATURAL/ACCIDENTAL EVENTS

1. Collinwood School Fire - Collinwood, Ohio (March 4, 1908)

America’s second worst school disaster occurred at Collinwood School in what is now Cleveland, Ohio, when overheated steam pipes ignited wood joists under the front stairs. Ultimately, 172 of the school’s 366 pupils, two teachers and one rescuer perished. As the children found the flames close upon them, they attempted to ascend the stairs, which caused a mass crush from the children simultaneously descending the stairs in the three-story building. Panic ensued as children at the foot of the stairs attempted to fight their way back to the floor above, while those coming down shoved them back. Most of the 200 students fighting for their lives died here. The majority of those that escaped

managed to turn back and reach the fire escape and windows in the rear. According to the county coroner, “The construction of the school house was an outrage. The hallways were narrow and there was practically only one mode of exit. The children were caught like “rats in a trap.”⁶²

Problems with the crowd escalated as the majority of the 8,000 residents of Collinwood arrived at the school and fought with police and firefighters to gain access to their children. Many parents helplessly touched the hand or stroked the head of their child as they struggled to free their children from the crush of trampled upon bodies. Unable to remove them they watched their children die before them. With the police greatly outnumbered and unable to control the crowd, a few of the residents helped the police fight back.⁶³

The final casualty of the blaze was the Collinwood community’s independence. With the city unable to guarantee fire safety resources - such as a paid fire department - for its inhabitants, voters approved Collinwood’s annexation into Cleveland less than two years after the blaze.⁶⁴

2. New London School Explosion - New London, Texas (March 18, 1937)

America’s worst school disaster occurred on March 18, 1937, after a natural gas explosion at the New London School in Texas. The 253 feet long and 56 feet wide building appeared to immediately lift in the air and then smash to the ground. The roof

⁶² “165 Children Perish in Fire: Penned in by Flames and Jammed Against Locked Door in Collinwood (Ohio) School. Many Trampled to Death. Broke from Fire Line as Flames Swept Up Stairway and a Panic Followed. Incendiary is Suspected. No Wires to Ignite the Woodwork Where the Flames Started in the Basement. Two Teachers are Victims. Parents Fight with Firemen in Desperate but Vain Effort to Rescue the Little Ones.” *ProQuest Historical Newspapers the New York Times (1851 - 2004) Database* (Document ID: 104798571) (1908), <http://www.proquest.com/> (accessed July 17, 2008).

⁶³ Ibid.

⁶⁴ “Lessons from the Collinwood School Fire,” <http://www.pajamadeen.com/firefighting/collinwood-fire> (accessed July 15, 2008).

and walls collapsed, burying the victims in a mass of brick, steel, and concrete. The tragic result was approximately 298 students and teachers, nearly three-fifths of the school's students and teachers, in the building at the time were killed.⁶⁵

Walter Cronkite was a young journalist at the time and would go on to become one of the 20th century's most well known reporters. He described the school explosion as the "day a generation died."⁶⁶

3. Our Lady of the Angels School Fire – Chicago, Illinois (December 1, 1958)

Undetected at birth and uncontrolled in the early moments of its life, it can grow into a savage, indiscriminate killer. This is not the description of a terrorist, but the description of one of the nation's worst fires, and a microcosm of all great tragedies. On December 1, 1958, the Our Lady of the Angels School fire in Chicago, Illinois killed 92 children and three nuns.

The fire burned unnoticed at the bottom of the northeast stairwell shortly after 2:20 p.m. As the heat broke the window, fresh air rushed in and the empty stairwell turned into a chimney, bypassing the first floor, protected with fire doors and onto the second floor. Simultaneously, hot gases from the fire entered an open pipe shaft in the basement stairwell and flowed into the cockloft between the roof and ceiling of the school. Flames erupted in the hidden area above the six north-wing classrooms packed with 329 students and six nuns. The first box alarm was not sounded until 2:42 p.m., meaning twenty minutes had passed since the first smell of smoke. All fatalities would occur in five of these classrooms.⁶⁷

By the time victims reacted, egress was compromised and the only viable escape for most children and nuns was through windows. Many were killed in their seats as

⁶⁵ William N., Grigg Jr., "New London, Texas School Explosion," <http://www.nlse.org/> (accessed July 17, 2008).

⁶⁶ Jimmy Isaac, "Faces, Forever Changed: School Blast Survivors Still Unable to Talk about those they Lost," *Longview News-Journal*, March 18, 2007, http://www.news-journal.com/news/content/news/stories/03182007_LONDON_MAIN.html (accessed July 20, 2008).

⁶⁷ Ibid., 26-34..

flames and smoke poured through the broken transoms above the doors making escape impossible. Other children were found at the windowsill unable to scale the greater than 3 feet sills from the ground openings. They were piled on from fellow classmates. One hour later at 3:45 p.m., the fire was brought under control.⁶⁸

The reaction of school officials was widely criticized. As a Catholic school, Our Lady of the Angels had strict rules that students and teachers were expected to follow. At the time of the fire, one of these rules permitted only the mother superior, the school's principal named Sister Mary St. Florence Casey, to ring the fire alarm. In Room 212, Sister Therese was doing what she thought was best. As smoke poured over the transom into Room 212, she thought the chimney must be backed up. When she felt the unusually hot doorknob, she knew it must be a fire. Still, she knew they could not leave the room until the fire alarm sounded. What she did not know was that the path of egress used during orderly fire drills was being cut off as flames and smoke grew in the corridor outside. Without experience and an alternative plan, Sister Therese decided around 2:30 p.m., "We can't go until we're told. Let's pray." As she concluded the prayer, the fire alarm had still not sounded when the heat shattered the transom. It was then that she ordered the children to the windows. Twenty-eight fifth graders would die in Room 212. She too perished.⁶⁹

First responders had the difficult task of performing their professional tasks while some had children trapped or missing. A child of one of the firefighters died in the blaze. Firefighters arrived to children hurtling themselves out, or being pushed out by classmates of the upper story windows, covering the pavement. One after another they jumped as rescuers and parents attempted to catch or break their falls before hitting the concrete. Lieutenant Charles Kamin of the Chicago Fire Department reached the top of the ladder to Room 211 to discover eighth-grade children piled on top of each other, crowding the window opening and pulling at each other desperately to reach safety. With the room about to ignite, Kamin began pulling kids out by their belts and dropping them.

⁶⁸ *Angels Too Soon*, DVD, *Angels Too Soon*, (Chicago: WTTW, 2003).

⁶⁹ David Cowan and John Kuenster, *To Sleep with the Angels. The Story of a Fire* (Chicago: Ivan R. Dee, 1996), 55-56.

He hoped they would grab the ladder as they fell, but broken bones were the better alternative to remaining in Room 211. Within two minutes, the room reached its flash point and as Kamin pulled another boy whose clothes were on fire, he helplessly witnessed as the knees of the remaining children simply buckled, and the children wilted like a bunch of burning papers before collapsing straight to the floor.⁷⁰

B. SCHOOL SHOOTINGS

1. Thurston High School - Springfield, Oregon (May 21, 1998)

At Thurston High School, 15-year-old Kip Kinkel walked into the cafeteria in a trench coat and after firing 51 shots, student Jacob Ryker subdued him, but not before killing two and wounding 23. When police searched Kinkel's home, they found his parents fatally shot. They also found five bombs, a hand grenade and a howitzer shell casing, though Kinkel's intentions with the explosives was unknown.⁷¹

The day before the shooting, Springfield Police arrested Kinkel for having a stolen gun. Kinkel had paid \$110 to another boy for the shotgun. He was detained briefly and released to his parents. When asked if he intended to hurt anyone, he said no. He just liked guns.⁷²

As a skinny, freckle-faced freshman, Kinkel's obsessions with guns and bombs were all but ignored by adults at a school strapped for school counselors with a ratio of about 1 counselor for 700 students in a school with more than 1,500 students.⁷³

2. Columbine High School - Littleton, Colorado - (April 20, 1999)

The watershed event for U.S. school safety and security occurred within the Jefferson County School District at Columbine High School shooting in Littleton, Colorado (1999) where 12 students and 1 teacher were killed by two high-school

⁷⁰ Cowan and Kuenster, *To Sleep with the Angels. The Story of a Fire*, 75-81.

⁷¹ Timothy Egan, "Oregon Freshman Goes to Court as Number of Deaths Rises to 4," *New York Times* (May 23, 1998) <http://www.proquest.com/> (accessed July 18, 2008).

⁷² Ibid.

⁷³ Ibid.

classmates. On the morning of April 20, 1999, seniors Dylan Klebold and Eric Harris took their first life after encountering two students having lunch on the school lawn. Their simple goal was to kill as many fellow students and teachers as possible by detonating two 20-pound propane bombs and then shooting everyone that survived the explosions. When the bombs failed to detonate, their alternate plan resulted in moving throughout the school firing at students and teachers and igniting pipe bombs for the next 45 minutes.⁷⁴ Images from the incident shocked the nation and caused school districts nationwide to evaluate their safety and emergency plans.

Teacher Dave Sanders was one of the victims who were severely wounded from a shotgun blast. After briefly exchanging gunfire with law enforcement, Klebold and Harris turned their weapons on themselves and forty-seven minutes after taking their first victim, they themselves lay dead.⁷⁵

A Unified Incident Command Post was established at 1159 hours consisting of the Littleton Fire Department and the Jefferson County Sheriff's lieutenant in charge.⁷⁶ Criticism arose that the incident command post was established too late and with insufficient resources. It was at 2:40 p.m. that SWAT officers were able to finally reach Sanders and about 30 students that were hiding inside Science Room 3. Paramedics would not get to Sanders for another 30 minutes, at which point he had no pulse and there was nothing rescuers could do for him. Sanders' death would serve as the impetus for transforming law enforcement actions throughout the nation in dealing with the active shooter. In an adjoining classroom, deputies found another 50 to 60 students and two teachers hiding. From there they moved into the library where they would discover the greatest carnage.⁷⁷

⁷⁴ Shoemaker, *Terrorism in American Schools: The First of all Fears. Confronting Violence in our Schools: Planning, Response, and Recovery*, August 19, 2007.

⁷⁵ Ibid.

⁷⁶ *Wanton Violence at Columbine High School* (Emmitsburg, Maryland: United States Fire Administration, Federal Emergency Management Agency, 1999),
<https://www.hSDL.org/homesec/docs/health/nps15-051004-02.pdf&code=d8dad054904a2cb530eb00f928bf2954> (accessed August 29, 2007), 16.

⁷⁷ *The Report of Governor Bill Owens' Columbine Review Commission*, (2001),
www.state.co.us/columbine/Columbine_20Report_WEB.pdf (accessed July 9, 2008), 79-81.

Students were transported by bus to a local elementary school where parents were advised to await their child's arrival. Since the school was a crime scene, there was a delay for the coroner to gain access and many did not learn of their children being killed until late the following day.⁷⁸

In October 1997, Columbine's principal suspended Harris and Klebold for hacking into the school's computer system, but did not notify law enforcement officials. Three months later, the Jefferson County Sheriff's Office had arrested Harris and Klebold for breaking into and stealing contents from a van, but their policy at the time was to only report serious crimes to school administrators, such as drug dealing, assault, and other felony crimes. Parents of a student, threatened on a web page by one of the shooters, filed a complaint with the Sheriff's office. They, in turn, reported the complaint to the School Resource Officer, but did not notify school administrators.

Before the incident at Columbine occurred, the school district had begun to work on changing their emergency plan. After considerable effort, a new plan was adopted in the fall of 1999. The plan identifies a wide variety of emergency incidents and describes what faculty and other staff should do in response to each situation. The plan lists who is in charge, whom to contact, what to do, and where to go in the event of various emergencies. A partial list of the situations covered fire, student-staff illness, injury, or death, building explosion, bomb threats, bus accidents, suicide threats, and kidnapped or missing persons.⁷⁹ Also, before the incident, special response teams had never considered a school-based scenario in their drills because they believed it was an unrealistic training scenario.⁸⁰

⁷⁸ *The Report of Governor Bill Owens' Columbine Review Commission*, 58.

⁷⁹ *Wanton Violence at Columbine High School*.

⁸⁰ James Graham and others, "Mass-Casualty Events at Schools: A National Preparedness Survey," *Pediatrics. Official Journal of the American Academy of Pediatrics* 117 (2006), <http://www.pediatrics.org/cgi/content/full/117/1/e8> (accessed January 21, 2008), e12,

3. Platte Canyon High School, Bailey, Colorado - (September 27, 2006)

A stranger walked into Room 206 of Platte Canyon High School in Bailey, Colorado, shut the door, and placed his backpack on a desk. The teacher addressed the man and asked what his purpose was in the classroom. The intruder pulled out a handgun and ordered all male students and the teacher out of the classroom. Three minutes after 911 was called, officers arrived on the scene and made entry into the school in an active shooter formation. Within minutes, they located the shooter and secured the school. Barricaded in the room, the situation changed from active shooter to a hostage situation requiring a negotiator. Simultaneously, all students had been evacuated from the school complex, except for the two still held as hostages.

The students were all taken by bus to a local elementary school allowing staff to assist with student accountability. This allowed parents to go to one location to pick up their children. After two hours of no contact with the intruder Duane Morrison, or the two hostages, the SWAT Team made entry. One hostage ran out of the room. The intruder shot the other as she attempted to leave. SWAT members fired upon Morrison as he simultaneously fired upon himself. He was pronounced dead on the scene while his victim was pronounced dead at the hospital. If any school learned the lessons of Columbine, it was nearby in Bailey, Colorado.

4. The Amish School Shooting at West Nickel Mines, Pennsylvania - (October 2, 2006)

Charles Carl Roberts IV walked into the single room Amish schoolhouse in West Nickel Mines, Pennsylvania and ordered the adult women and boys to leave. At 11:05 a.m., the police heard three shotgun blasts followed by rapid-fire pistol shots. One shotgun blast was fired through the window by the main door, nearly missing several officers. As the troopers rushed the building, smashing windows with batons and shields, Roberts turned the pistol on himself as troopers broke through the window. In execution

style, Roberts had gunned down the lineup of girls on the floor, killing five and critically injuring the other five girls who survived by rolling around and burying their heads in their arms.⁸¹

5. Virginia Tech University (VTU), Blacksburg, Virginia – (April 16, 2007)

Similar to the Columbine incident, law enforcement officials from Virginia Polytechnic Institute and State University (Virginia Tech or VTU) came under sharp criticism for their actions on April 16, 2007 when Seung Hui Cho walked onto the campus and killed 32 students and faculty, wounded 17 more, and then killed himself.⁸² Cho had secured the exit doors with chains. In just 8½ minutes, he had discharged 204 rounds. He still had 174 rounds left. Killing the first two victims was a tactical error that allowed SWAT teams to assemble. Many of the students were seated in tight school desks, allowing Cho to walk down the aisle shooting most in the head where they sat.⁸³

The first victim was killed at about 7:15 a.m. The Virginia Tech Police Department (VTPD) arrived at 7:24 a.m. and secured the crime scene. Approximately two hours later between 9:40 and 9:51 a.m., Cho began shooting in Room 206, killing 9, before moving to Room 207 where he continued shooting. Upon hearing the numerous gunshots, students in Room 205 barricaded the door preventing Cho's entry, despite his firing at them through the door. As he entered Room 205, he began shooting students at their desks. Three people that pretend to be dead survive. Cho returned to rooms 207, 205, and 204, shooting more victims. At 9:51 a.m., as police reach the second floor, Cho shoots himself in the head.⁸⁴

⁸¹ Donald B. Kraybill, Steven M. Nolt and David L. Weaver-Zercher, *Amish Grace. How Forgiveness Transcended Tragedy* (San Francisco: Jossey-Bass, 2007), 26.

⁸² *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia.* (Virginia: Virginia Tech Review Panel, August 2007), <http://www.governor.virginia.gov/TemContent/techPanelReport-docs/FullReport.pdf> (accessed February 12, 2008), 1.

⁸³ Personal communication with John Giduck, August 27, 2007, Clarkston, MI.

⁸⁴ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia.* (Virginia: Virginia Tech Review Panel, August 2007), <http://www.governor.virginia.gov/TemContent/techPanelReport-docs/FullReport.pdf> (accessed February 12, 2008), 25-27.

Cho's background and the VTU incident epitomize the failure of connecting the dots between school officials, law enforcement, and mental health professionals. By the time Cho enters 7th grade, he is shy and introverted and diagnosed with "selective mutism." In 8th grade, his writings reference Columbine and concerned teachers ask his parents to intervene with counseling. After a year on antidepressants, he responds well and is taken off the medication. In the fall of 2004, Cho enters his sophomore year at VTU and takes an interest in writing. He submits a book idea to a publishing house, which is rejected, seemingly depressing him.

Individuals and departments at VTU clearly knew of his growing mental instability by his junior year in 2005, yet they did not have all the information that collectively could have made a difference. Within three weeks, two females have filed complaints with the Virginia Tech Police Department (VTPD), after disturbing instant messages (IMs) from Cho. After being told to have no contact with the second student, he tells his roommate in an IM that, "I might as well kill myself now." The roommate contacts VTPD who bring Cho in to be evaluated by a prescreener who considers him "an imminent danger to self or others." This leads to an overnight stay at the Carilion St. Albans Psychiatric Hospital for mental evaluation. The next morning he is released as the psychologist concludes that he is not a danger to himself or others.

In 2006, Cho has numerous verbal altercations and his writings become darker, including a paper he writes about a young man who hates the students at his school and plans to kill them and himself. Some faculty members bring their concerns to the dean. One professor threatens to resign if Cho is not removed from her class. The night before the assault, Cho's family receives his weekly Sunday night call and report the conversation as normal.⁸⁵

6. Northern Illinois University - Dekalb, Illinois (February 14, 2008)

In the fourth U.S. school shooting within a week, a former student opened fire from the stage of a lecture hall, killing five students and wounding more than a dozen

⁸⁵ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia, 21-24.*

others before taking his own life. Lauren Carr, a 20-year-old sophomore, was sitting in the third row of the lecture hall when the gunman walked through the door with a gun pointed straight ahead. “I personally Army-crawled halfway up the aisle...I said I could get and run or I could die here.” Police were on scene 29 seconds after the 911 calls started coming in.

C. TERRORISM

1. Ma’alot, Israel - School Attack (May 15, 1974)

Israel’s largest incident of school violence occurred on May 15, 1974, Israel’s Independence Day, in the northern town of Ma’alot where a group of 11th grade students from Safed (Tsfat) were on a field trip to the Golan for a full day of hikes. That night, the children were housed at a school in Ma’alot where they slept on the floor. The Marxist-oriented Palestinian terrorist group, known as the Popular Front for the Liberation of Palestine (PFLP), attacked the school dressed as Israeli Defense Forces (IDF), killing the guard and some of the children. Some children escaped by jumping out of a window on the second floor and the remaining 90 teenagers and 10 teachers were held as hostages. The Israeli government, unaccustomed to negotiating with terrorists, rescinded this position with the scores of children captives and the promise that the innocent hostages would not be harmed. Terrorists had demanded the release of Palestinian guerrillas being held in Israeli jails. After negotiations broke down, a unit of the elite Golani brigade stormed the building. The terrorists began to shoot the young hostages. All of the terrorists were killed in the assault, but not before 68 were wounded, and the lives of 22 children, along with three teachers and one soldier were taken. In Beirut, celebratory demonstrations were ordered by Nayef Hawatmeh, the PFLP leader, to honor the fallen fedayeen as noble martyrs of the cause.⁸⁶ The incident in Ma’alot resulted in a national trauma, the formation of the anti-terror unit known as Yamam within the Israel National Police and a national policy for school protection.⁸⁷

⁸⁶ *What Happened at Ma’Alot, Kiryat Shmona, and Other Terrorist Targets in the 1970s?*.

⁸⁷ Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 31-32, 35.

2. Beslan, Russia, September 1 – 3, 2004

The terrorist attack in 2004 on Beslan School Number One in Beslan, Russia was selected because it is a modern day example of what would be America's worst nightmare. The intentional harming of hundreds of children in a place considered safe; where children are sent without a second thought – U.S. schools.

The Beslan incident is the high watermark for a terrorism attack on schools and hostage taking, and it is the defining event for serious consideration to school security from terrorism. It is a distinction they, or any other community, does not want. According to former Homeland Security Secretary Tom Ridge, one of the implications for the U.S. from the Beslan incident was the request from President Bush to his top aides to review plans in dealing with hostages.⁸⁸ Beslan is the worst of worst-case scenarios, and as a nation, the U.S. is largely untested and somewhat apathetic to threats that will potentially impact schools, directly or indirectly; specifically, when it comes to the terrorism threats.

Located 900 miles south of Moscow in the Russian Republic of North Ossetia, Beslan is an agricultural and industrial community of 40,000 of predominantly Orthodox-Christians, along with a Muslim minority. Children learn at a very young age to restrain their emotional expressions in the presence of adults in North Ossetia.⁸⁹

Beslan was not an isolated terrorism incident in Russia, though it was the first attack specifically targeting children. It was the culmination of numerous attacks in 2004. A subway train explosion in Moscow caused by a suicide bomber on February 6, killed 39 and wounded 350. An explosive device in May at a holiday concert killed seven, including the Chechen President. Events in August of 2004 escalated when two Russian airliners that departed from Moscow's Domodedevo Airport crashed a few

⁸⁸ Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 146.

⁸⁹ Ughetta Moscardino and others, "Narratives from Caregivers of Children Surviving the Terrorist Attack in Beslan: Issues of Health, Culture, and Resilience," *Social Science & Medicine* 64, no. 8 (2007), <http://nps.illiad.oclc.org/illiad/illiad.dll?SessionID=I130407393J&Action=10&Form=69&Value=29575> (accessed April 30, 2008), 1778-1779.

minutes apart, killing a total of 90 passengers and crew. The investigation determined that two Chechen suicide bombers from the Islambullah Brigades were responsible for the terrorist acts.⁹⁰

In Russia, the first day of school in September is known as the Day of Knowledge where children arrive with gifts for their teachers, often bringing extended family members to celebrate the children's first day of school. Beslan Middle School No. 1 was a combined facility for grades 1 through 11 at which time Russians graduate high school.⁹¹

In 2004, Beslan's Day of Knowledge became the beginning of the largest school terrorism disaster in history when reports of 32 and up to 49 radical Islamist terrorists took the official number of 1,181 teachers, children, and their parents hostage. Two of the dozens of kidnappers were females strapped with bombs. Explosives were deployed around the school. The terrorists showed no mercy and no reluctance in killing children. Early in the siege, 18 large men and teenagers were brought to the second floor and executed.⁹² Children were forced to stand in front of windows so snipers could not kill the terrorists.⁹³ Hostages were denied food and water, and denied the use of the school's toilets. Soon the gymnasium became unbearably warm and foul. On the second day, women were telling their sons to urinate into plastic bottles so that children, even infants, could drink it to stay alive.⁹⁴

On the third day after 1 p.m. an explosion occurred though the reports from hostages would conflict as to the cause. Some believe one of the bombs strung in the gym, fell from the basketball backboard and detonated. Others thought the foot of one of the terrorists slipped from a pedal detonator on which he was standing. Whatever the

⁹⁰ Gennady Kovalenko, *Countering Urban Terrorism in Russia and the United States. Proceedings of a Workshop* (Washington, DC: The National Academies and the Russian Academy of Sciences, 2006), 168-170.

⁹¹ John Giduck, *Terror at Beslan* (Colorado: Archangel Group, 2005), 111.

⁹² Ibid., 117-123.

⁹³ Ariel Cohen Ph.D., "U.S. - Russian Security Cooperation after Beslan," *Backgrounder*, no. 1809 (2004), <http://www.heritage.org/Research/RussiaandEurasia/bg1809.cfm> (accessed March 27, 2008).

⁹⁴ Uschan, *The Beslan School Siege and Separatist Terrorism*, 8.

cause, after 62 hours, a firefight between the terrorists and Russian Special Forces erupted, along with an armed local population. The battle was on that lasted hours into the night.⁹⁵

The tragedy at Beslan was Russia's September 11 as terrorist's subjected hostages to abuses not seen in Europe since the Nazi atrocities of World War II. The death toll and the number of injuries varies widely, with those killed ranging from 330 to 400 and some believe the number is two to three times higher. Official Russian statistics determined that 330 individuals died. Of those, 317 were hostages and 186 of them children.⁹⁶

Russia has a history where embracing admissions of wrong-doing are indicative of weakness. In the final analysis, the uncooperative Russian government prevented a thorough investigation examining the role of the Russian security forces and the responsibilities of the authorities.

Russian authorities refused to examine the terrorist attack within the larger context of the Chechen war. After the investigators confirmed that Chechen leader Shamil Basayev "was responsible for everything," there was no need to conduct further investigations, determine the conditions making the attack possible, or reconstruct events. Thus, they could write in the investigatory documents that the weapons and instructions were received "from unknown people at an unknown time in an unknown place," that everything took place under the leadership of Basayev, who personally gave the terrorists almost every automatic weapon and bullet.⁹⁷

Government officials were shocked at the initial arrival of the citizens of Beslan. Many showed up with handguns, shotguns, hunting rifles, and even rocket-propelled grenades (RPGs) were in abundance due to the ongoing war and the close proximity of the Ingush. Frustrated at the perceived lack of action from the government, the leaderless

⁹⁵ Giduck, *Terror at Beslan*, 146.

⁹⁶ John B. Dunlop, *The 2002 Dubrovka and 2004 Beslan Hostage Crises*, ed. Andreas Umland Dr. (Germany: Ibidem, 2006), 17.

⁹⁷ Alexander Cherkasov, "Looking Back at Beslan," *Russian Analytical Digest*, no. 5 (2006), <http://se1.isn.ch/serviceengine/FileContent?serviceID=PublishingHouse&fileid=E67E3A84-38C3-0150-C8FA-CF144BE3AE7F&lng=en> (accessed March 25, 2008).

mob grew from dozens to hundreds and surrounded the school. The vigilantes began to surge forward, shouting at the terrorists and firing rounds at the school.⁹⁸ The civilian population would never be secured or controlled by law enforcement or military officials. There is speculation that it was gunfire from the angry mob that caused the eruption that started the firefight and subsequent explosions.⁹⁹ As a result of Beslan, schools throughout Moscow increased security measures and provided uniformed guards. According to press reports, all 1,600 schools in the capital were equipped with close-circuit cameras and permanent security guards.¹⁰⁰

If capable of taking an objective approach to study the true events of Beslan, the reward would not only benefit Russians still under the threat of similar attacks; the study would help schools, mental health professionals, and first responders the world over, better understand the lessons to prevent, prepare, and recover from terror attacks on schools.

D. PROXIMAL THREATS TO SCHOOLS

Not all mass casualty incidents directly target schools. Still, there is no denying the significant impact events such as the Oklahoma City bombing, the terror attacks of 9/11, the SARS disease outbreak, and Hurricane Katrina had on local schools, communities, and the entire nation. Research studies on the physical and psychological components of recovery, especially on children, have been developed for the school community, and are included in this chronology. The reader will note the brevity of the overview. A plethora of research on each incident exists and this section is intentionally brief. The incidents are put into context of the other disasters mentioned as far as their impact on schools and the school population is concerned. Findings from each will be covered throughout the thesis.

⁹⁸ Giduck, *Terror at Beslan*, 125.

⁹⁹ Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 31-32, 43.

¹⁰⁰ United States, Department of State, “Terrorism Strikes Russia: Summary of the Attacks from August 24 to September 3, 2004,” 2007.

1. Oklahoma City Bombing – April 19, 1995

More than any other U.S. disaster pre-9/11, the 1995 bombing in Oklahoma City provides the greatest research into terrorism's impact. Timothy McVeigh, a U.S. citizen angry with his government, bombed the Murrah Federal Building in Oklahoma City. Not only did the bombing shatter American innocence, it broke the stereotypical view of the terrorist. Some may question the addition of Oklahoma City as an example targeting children. McVeigh was aware that children were present in a daycare facility and he set out to intentionally target civilians, including children. McVeigh, with the help of Terry Nichols, attacked the Murrah Federal Building in Oklahoma City on April 19, 1995 with a 4,800-pound ammonium nitrate truck bomb. The Oklahoma City bombing was the first modern day attack on U.S. soil and provides a public health comparative analysis with terrorist attacks in other countries that have vast experience with terrorism.

Of the 168 deaths, 19 were children and 47 more children were injured. Many of the 19 children killed were located in a second floor daycare center, when the Murrah Building collapsed. Thirty children were orphaned. A total of 219 children lost a parent and more than 400 individuals were left homeless in the area. By 3:30 p.m. on the day of the bombing, a family assistance center known as the Compassion Center (the Center) was operational. During its 16 days of operation, the Center was a place to exchange information and to provide information about emergency services, mental health counseling, security, and comfort for victims and surviving family members. Four hundred mental health professionals tended to thousands of victims, survivors, family members and rescue workers as they sought information and solace. Within 48 hours, a need for a child mental health specialist on the death notification teams was recognized. Following the death notification, parents and other family members often had questions on how to talk to children of different ages and what reactions to anticipate, and how to manage their own grief in front of their children.¹⁰¹

¹⁰¹ *Responding to Terrorism Victims: Oklahoma City and Beyond* (Washington, DC: United States Department of Justice, (October 2000), <https://www.hSDL.org/homesec/docs/justice/NCJ183949.pdf&code=42be6429e55d66881afeef1764a499dd> (accessed April 16, 2008), 1-5.

2. New York – September 11, 2001

An examination of threats, preparedness and resilience cannot omit the events of 9/11. Not until then was psychological resilience from terrorism studied in greater context in the U.S. This section will only explore the events of 9/11 as they affected schools in the area of Ground Zero in New York City and the New York school district's long-term planning. The New York City Board of Education is the largest public school system in the United States with over 1.1 million students and 140,000 staff. Eight public schools are located within a quarter mile of Ground Zero and 9,000 students ranging from three to 18 years of age. While chaos ensued around them and transportation was shut down, school administrators proudly evacuated all 9,000 students without injury, and ensured family reunification with all 1.1 million students throughout the city. Approximately 1,500 children and staff suffered losses in their families. Within a day of the disaster, the Board of Education had provided school faculty with guidance on how to address the immediate needs of the students. During school evacuations, children witnessed people jumping from the burning towers. According to a New York Times editorial:

Many of the children were screaming for their parents who actually worked in the towers. As one teacher stepped into the street, a small child saw the burning bodies falling from the tower and cried out, “Look, teacher, the birds are on fire!”¹⁰²

Parents recall their anxiety in trying to reunify with their children. Most were not able to reunite with their children for over four hours. Reported stress symptoms increased with the parental allowance of unrestricted television viewing of the disaster coverage.¹⁰³

¹⁰² David Markenson, Anne Degnan and Gregory Thomas, *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11* (Columbia University: Columbia University. Joseph L. Mailman School of Public Health, (December 2004), http://www.ncdp.mailman.columbia.edu/files/9_11reportASSESSMENT.pdf (accessed November 12, 2007), 4.

¹⁰³ Robert Pynoos M.D. and others, “Impact of Terrorism on Children,” in *Kaplan & Sadock’s Comprehensive Textbook of Psychiatry. Volume II*, eds. Sadock, Benjamin J., M.D. and Sadock, Virginia A., M.D., Eighth ed., vol. 2 (New York: Lippincott Williams & Wilkins, 2005), 3554.

The important role of school officials cannot be underscored. Custodians in schools near Ground Zero on 9/11 were instrumental in protecting schools. Custodians were crucial to the maintenance of buildings. Some even slept in the schools to support rescue operations.¹⁰⁴

One of the interesting aspects from the report from Columbia University's National Center for Disaster Preparedness, titled "*Uncommon Sense, Uncommon Courage*," was the New York Board of Education's focus on the return to "normalcy," school continuity, and the short and long-term processes of recovery. This deviates from most after action reports that tend to focus primarily on response. The 9/11 tragedy is the worst disaster inflicted on American civilians in history. The *Uncommon* report is from a school's perspective, which adds credibility that can guide school districts across the country if faced with their own unfortunate consequences of a school disaster.

3. SARS – Severe Acute Respiratory Syndrome – Spring 2003

Thirty two deaths occurred in the Toronto area when the SARS outbreak struck. Originating in the Guangdong province of China, SARS produced symptoms of high fever, dry cough and difficulty in breathing. The outbreak of SARS was the largest public health concern in decades, with the most deaths occurring in China. Worldwide, the disease killed nearly 750 and infected more than 8,200 people. Closer to home, the area of Toronto, Canada was especially hit hard.¹⁰⁵

With a population of 4.36 million, Toronto was the largest metropolitan area outside of Asia affected by SARS. Most of the cases were related to in-hospital exposure to the virus. While enforced quarantine is rare, thousands ended up in quarantine in Asian countries and Canada.¹⁰⁶ Mass closures of schools occurred and Canadian

¹⁰⁴ Markenson, Degnan and Thomas, *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*, 49.

¹⁰⁵ Rajiv Sekhri, "SARS Shuts Toronto School, 6,400 in Quarantine," *Washington Post*, <http://www.washingtonpost.com/wp-dyn/articles/A49008-2003May28.html> (accessed August 23, 2008).

¹⁰⁶ *Survey Finds SARS having a Significant Psychological, Economic Impact on Lives of Toronto Residents* (Boston, MA: 2003), <http://www.hsph.harvard.edu/news/press-releases/archives/2003-releases/press06162003.html> (accessed August 23, 2008).

officials ordered home 1,500 students with a statement from the local health commissioner highlighting his authority on those who refused to comply would be hospitalized.¹⁰⁷

As critical as the intentions of terrorists is the access to information about patient health and treatment during a disease outbreak. There remains a great deal of ignorance, even from first responders, on who will be lead agencies and who will be support agencies during public health emergencies. In many states, it is public health authorities – not law enforcement, emergency management, or firefighting personnel- that have the authority to enforce compliance with medical treatments, to shut down institutions to prevent the spread of disease, and to issue quarantine and isolation orders.¹⁰⁸

4. Hurricane Katrina (August 30, 2005)

Americans are only three years removed from the largest natural disaster in U.S. history though the impact will always be present for many affected residents within the 90,000 square miles in Hurricane Katrina’s path in late August 2005. Hurricane Katrina gained strength in the Gulf of Mexico after traveling east to west across Florida. The storm’s impact on Mississippi, Alabama, and Louisiana, along with the resultant levee breaks, starkly revealed the vulnerability of at-risk populations in the U.S..

Following Katrina, the impact on schools was largely ignored. In the three Gulf States of Louisiana, Mississippi, and Alabama, more than 1.5 million residents, including as many as 370,000 children were forced to relocate from their homes. Children were subjected to traumatizing events in the aftermath of Hurricane Katrina by living in unsafe and overcrowded shelter environments, endured multiple relocations, and were subjected to separation from family members due to a lack of coordination among government

¹⁰⁷ Jeff Mitchell, “State Strategies for Fully Integrating Public Health into Homeland Security,” in *Special Topics in American Government for Homeland Security*, 0701/0702 Cohort. Fall 2007 ed. (Monterey, CA: Naval Postgraduate School, November 23, 2005), 1-12.

¹⁰⁸ Mitchell, “State Strategies for Fully Integrating Public Health into Homeland Security,” 3.

agencies. In the year following Hurricane Katrina, hundreds of students from New Orleans were turned away from public schools. This added to the significant challenges facing students already struggling in reading and math.¹⁰⁹

E. SUMMARY OF CHALLENGES FACING SCHOOLS

There are more options for schools to prepare and plan for natural disasters, because the factors are known. The unforeseeable as far as potential threats may be better understood based on research discovered from discriminate or indiscriminate attacks on schools around the world.

School shootings at Bailey, Colorado, Springfield, Oregon, and numerous other locations across the country exposed the vulnerability of children in U.S. schools. Attackers were not terrorists from foreign countries. They were other kids in the neighborhood, both rural and urban. In the case of Bath, Michigan and West Nickel Mines, Pennsylvania, they were local loners not considered threats to schoolchildren.

As of yet, the nexus from school violence to homeland security in America has not been seriously considered. However, by committing the same act yet changing the motive of the perpetrators to mirror Beslan, school attacks in the U.S. would immediately ascend to the top of homeland security issues and change the U.S. perspective on the threat and children's vulnerability. Coordinated attacks targeting children in Anytown, USA will affect the rest of the country, causing parents to pause on sending their kids to school. The question remains on what can be gleaned from Beslan, Avivim, and Ma'alot, and applied before they happen in America?

¹⁰⁹ Lori Peek, "Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction," *Children, Youth and Environments* 18, no. 1 (2008), 7, www.colorado.edu/journals/cye (accessed April 25, 2008).

Schools need to prepare for the possibility that they are not immune from attacks – terrorism or biological. The rest of the community should understand that threats in schools are not just the schools' problem; therefore, neither is the solution.¹¹⁰ Chapter IV will compare the analysis from the aforementioned case studies and glean lessons learned.

¹¹⁰ O'Toole, Mary Ellen, PhD., *The School Shooter: A Threat Assessment Perspective*, 33.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. COMPARATIVE ANALYSIS AND FINDINGS

The overarching thread of the findings and analysis stress the importance of physical and psychological reduction of exposure to traumatic circumstances. Less exposure to trauma results in quicker recovery.

A. VARIABLES OF ANALYSIS

Incidents will be analyzed using the following five variables:

- (1) **Time criticality.** Time is a critical factor in life and death situations as knowing what to do at the moment of danger can affect safety outcomes.
- (2) **Information sharing.** The lack of information sharing proved fatal in numerous school shootings where critical information was not shared with other disciplines that could have prevented the deadly outcomes.
- (3) **Family reunification.** Family reunification is an issue that is largely taken for granted. Yet, numerous incidents revealed the difficulty and trauma that loved one's experience when unable to connect with family. Some were found to suffer more from the separation from their parents than the actual disaster.
- (4) **Lockdown Considerations.** Lockdowns and technology can improve site security but at what costs?
- (5) **First responder readiness.** First responders are expected to arrive, provide comfort, and mitigate hazards. Readiness will include examining the role of the school resource officer (SRO). The ever-present issue of perimeter control from gathering crowds of concerned parents, onlookers, and the media will test readiness. Mass casualty incidents present numerous challenges, including the mental recovery for those expected to be stoic and psychological removed from the incident.

1. Time Criticality

Kenneth Trump testified before the Committee on Homeland Security in 2007 on protecting schools. Trump is President and CEO of National School Safety and Security Services, Incorporated, a Cleveland, Ohio-based national consulting firm specializing in school security and school emergency preparedness consulting and training.

The actions taken by school officials as the incident unfold, and in the first half hour or so immediately thereafter, can determine the severity of the impact on the lives of children and teachers for months and years to come.

And once public safety officials complete their heroic jobs and leave the school emergency site, it will be the school officials who will carry the bulk of the responsibility for the short and long-term recovery of their schools.¹¹¹

Time is one of the most important factors in survival of all disasters. With fires, the time of discovery and one's location, along with the time taken to spring into action, has often meant the difference between life and death. Pulling a fire alarm sends information that a threat may be near and action is required. Removing or delaying transmission of even the basic communication will compromise safety. Closely related to actions of school officials and consistent in all case studies is time criticality exemplified in the number of deaths at the Our Lady of the Angels School fire. The twenty-minute delay from awareness to notification allowed fire to spread to the second floor where all 95 victims perished in the classroom, or by jumping to escape the smoke and flames.

Those that survived in most examples reacted quickly and removed themselves from the threat in the early stages. The survivors of Beslan, Ma'alot, and Our Lady of the Angels fled during the initial threat where only precious seconds allowed them to preserve their safety. At VTU, many students in Room 205 were saved by the actions of a few that braced themselves against the classroom door as Cho arrived, trying to force his way in by shooting through the door.¹¹²

Students also rise to the occasion and quickly reacted to mitigate the situation. While wounded from a gunshot wound, 16-year-old Jacob Ryker tackled Kip Kinkel as he was reloading to continue shooting in the Thurston High School cafeteria. Ryker's actions undoubtedly saved lives.

What becomes clear is that similar to the first responders on 9/11 that served as the first line of defense as the U.S. went to war, the very first responders to an incident of crime, violence, mass casualty, or natural disaster that strikes the schools will be school

¹¹¹ Homeland Security, *Protecting our Schools: Federal Efforts to Strengthen Community Preparedness and Response*, 1, Congress #110 sess., 2007, <https://www.hSDL.org/homesec/docs/testimony/nps30-052107-06.pdf&code=236f28f1735ad8546c63ce14eb8064da> (accessed August 29, 2007), 4.

¹¹² *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 27.

officials. Students will look to teachers to safely remove them from dangerous environments. Despite prompt law enforcement responses, most shooting incidents were stopped by means other than law enforcement intervention.¹¹³

School personnel and their actions played an important factor in determining life and death. Individual actions from teachers are often heroic, usually stemming from their own initiative and not from school policy or training. In Collinwood, Ohio, teachers struggled heroically for their students by attempting to march them out as they had practiced in the past. Unfortunately, this march had always led them out the front door, which was directly involved in the fire. The children had never trained to seek an alternative exit.¹¹⁴ Many of the victims at the Collinwood and Our Lady of the Angels fires' never had a chance. Neither did the victims of the explosion at the New London School, the victims on the 9/11 flights, and victims inside the Pentagon and upper floors of the World Trade Center.

Teachers and staff protected children for hours before SWAT teams made entry at Columbine High School. At schools in the vicinity of Ground Zero, school custodians were credited for multi-tasking and minimizing the impacts of the disaster by shutting down the air handling systems, and maintained school facilities that were being utilized by recovery workers. They were also instrumental in getting school facilities back in order for continuity. They are a critical component in future response planning.¹¹⁵

While the majority of the incidents were mass casualty incidents (MCI), there are examples of non-MCI events that did not become MCIs for any other reason than the actions taken that prevented the disaster scene from becoming a mass casualty incident. As all too often, positive changes occur *after* tragedies. Another casualty of time occurred at Columbine when teacher Dave Sanders died from the trauma of his wounds

¹¹³ Bryan Vossekuil and others, *The Final Report and Findings of the Safe School Initiative: Implications for the Prevention of School Attacks in the United States* (Washington, DC: United States Secret Service and United States Department of Education, June 2004).

¹¹⁴ *Lessons from the Collinwood School Fire*, 1.

¹¹⁵ Markenson, Degnan and Thomas, *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*, 19-20.

by waiting over three hours before receiving medical attention. Law enforcement across the country quickly learned the lessons of Columbine by following up with “active shooter” protocols nationwide. Time will no longer be granted to perpetrators to kill at random. Law enforcement will now seek to engage the shooter immediately. Negotiation will be secondary to securing the scene and minimizing deaths. This will not eliminate violent deaths in the schools, but they will shorten the duration of the trauma, and shorten the psychological recovery for victims. The immediate law enforcement convergence on active shooters at West Nickel Mines (Amish school), Platte Canyon High School, and from students at Thurston High School prevented greater tragedy than already inflicted.

Another mass casualty was averted two weeks after the Our Lady of the Angels fire on December 16, 1958, when a fire occurred at a school in nearby Kenilworth, Illinois. Immediately after Our Lady of the Angels, Kenilworth school officials had contacted local fire authorities to review their safety plans and evacuation procedures. One of the fire marshal’s recommendations had been to practice alternative egress from the building. Similar to Our Lady of the Angels, a fire started in the basement and smoke quickly filled the hallway. The similarities end there. Instead of fighting the fire as the custodian was first inclined, he activated the alarm, which allowed the orderly evacuation of 650 students. Two fire sprinklers extinguished the fire in the primary hallway. As practiced, the children used the alternate exit. None injured, none killed.¹¹⁶

One’s experience with handling disasters is important. Knowing what to do and practicing those actions are actions, even if momentarily delayed, that will likely kick in during the real event. Our Lady of the Angels demonstrated that possessing the knowledge and acting upon it are two different things. The lack of experience from fire drills to lockdowns, or even cultural norms that prevent the intuition of pulling a fire

¹¹⁶ Chester Babcock and Rexford Wilson, *The Chicago School Fire* (Batter Park, MA: National Fire Protection Association, January 1959), http://www.nfpa.org/assets/files/PDF/Lady_of_Angels_report.pdf (accessed April 13, 2008), 175.

alarm when smelling smoke, will result in more deaths. One can possess the intuition of proper actions to take when knowing a dangerous situation such as fire exists. Not acting upon the knowledge is useless.

Whether one is concerned more about the terrorist, the fire, or the deranged shooter, compromised egress can lead to dire consequences. It is up to school officials with possible input from first responders to practice drills with alternate exits. This will allow preparedness to kick in when primary exits are blocked. Students and faculty can also benefit since they are often in different parts of the school, such as the cafeteria or media center, when disaster may strike.

2. Information Sharing

The lack of information sharing has proven deadly when numerous red flags are ignored, or when critical information is kept from other agencies. Without information sharing, school officials, law enforcement, and mental health professionals are prevented from connecting the dots that could have stopped attacks or otherwise prevented disaster.

There are substantial obstacles in sharing critical information. Confusion exists with education officials, healthcare professionals, law enforcement, and others that are not fully informed on what information they can share on persons who are likely to be a danger to self or others. Parents, teachers, and students should learn to recognize warning signs and encourage those who need help to seek it.¹¹⁷

Public health emergencies will create significant public fear. Unlike school shootings or terrorism that target specific groups, an influenza pandemic targets the entire population, causing widespread concern versus isolated populations (schools). The absence of information will only increase existing anxiety. Following the SARS outbreak, information dissemination on quarantining was delivered to the public from the

¹¹⁷ Michael O. Leavitt, Margaret Spellings and Alberto R. Gonzales, *Report to the President. on Issues Raised by the Virginia Tech Tragedy* (Washington, D.C.: Department of Health and Human Services, Department of Education, Department of Justice, June 13, 2007), <http://www.hhs.gov/vtreport.pdf> (accessed August 19, 2007), 2.

following sources: the media (54%), public health authorities (52%), occupational health department (33%), healthcare providers (29%), word-of-mouth (23%), hospital websites (21%), and other websites (40%).¹¹⁸

A significant amount of the affected population was not satisfied and angry with the lack of information provided regarding infection control measures to be followed during quarantine. Nearly 30% did not believe they had received adequate information on SARS. Another 20% were not told with whom they could have contact; 29% did not receive information on when to change masks; and 40% - 50% did not receive instructions on the use and disinfection of personal items, including toothbrushes and cutlery; and 77% were not informed on how to use and disinfect the telephone.¹¹⁹

Columbine and Thurston high school shootings revealed gaps in communication between law enforcement and school officials with critical consequences, which would also occur at VTU. All perpetrators had previous law enforcement contact and previous disciplinary issues in school.

Eight to ten days before the attack at Beslan, the Russian government had developed intelligence that a school in the Chechyan region was being targeted, yet only one guard was on hand at the Beslan School that morning. The terrorist attack on Beslan took months of planning and reconnaissance, studying the buildings and surrounding neighborhoods. The attack was planned down to the smallest detail and the reporting of suspicious activity could have prevented the attack and no children would have died.¹²⁰

There is no single profile of a school shooter, particularly when the perpetrator is a teenager going through complex identity crises and emotions. Following the killing of two students at Thurston High School, Superintendent, Jamon Kent defended the school's actions. "If we detained every student who said, 'I'm going to kill someone,' we would have a large number of kids detained." Mr. Kent called Kinkel "an average, everyday

¹¹⁸ Laura Hawryluck and others, "SARS Control and Psychological Effects of Quarantine, Toronto, Canada," *Emerging Infectious Diseases* 10, no. 7 (July 2004), www.cdc.gov/eid (accessed August 25, 2008), 1208.

¹¹⁹ Ibid., 1208.

¹²⁰ Giduck, *Terror at Beslan*, 262.

kind of kid.” Fellow students recall Kinkel telling his literature class of his plans to “shoot everybody,” and in another class demonstrating how to build a bomb with a timing device.¹²¹

In Columbine, if the information had been shared, the perpetrators might have been investigated and the attack may have been prevented. It may also get the individual the psychological help needed and untie the hands of law enforcement. The Columbine Review Commission recommended law enforcement and school officials establish protocols for exchanging criminal and disciplinary records to the extent permitted by state and federal law. As a result, in 2000, the State of Colorado enacted legislation to clarify what information can be exchanged and shared. Law enforcement can now notify the school district when their students engage in criminal behavior resulting in either a juvenile delinquency report or a juvenile criminal report.¹²²

The media will play one of the most critical roles in regards to information sharing. In Colorado, the local media had erroneously requested all available EMS personnel in the vicinity to report to Columbine High School to assist with the mass casualty incident. Some arrived from two hours away, but the un-requested influx only added to the onsite challenges and confusion. A local news crew had aired an unauthorized and unneeded request that all available EMS personnel in the vicinity of Littleton should go to Columbine High School to assist with the mass casualty incident. The responsiveness of these personnel, some of who drove as long as two hours to reach the scene may be considered commendable by some, but the influx of unnecessary providers only added to the onsite challenges. The overwhelming urge to help will cause first responders and citizens to converge en masse to the scene. Unless requested, those arriving may only add to the great confusion that already exists.¹²³

¹²¹ Egan, *Oregon Freshman Goes to Court as Number of Deaths Rises to 4*, 1.

¹²² *School Safety: Improving Information Sharing between School District and Law Enforcement Officials* (Lessons Learned Information Sharing, 2006),
<https://www.llis.dhs.gov/docdetails/details.do?contentID=19196> (accessed October 25, 2007).

¹²³ *Wanton Violence at Columbine High School*, 24.

Were warning signs present that could have recognized Cho as a potentially violent student? If present, could those signs have averted the VTU massacre by connecting the dots through information sharing? The answer is yes to both questions. At VTU, campus agencies feared privacy laws regarding the sharing of information. Therefore, VTU did not recognize Cho as an emerging threat despite his contact with police, a court order for psychiatric treatment and reports from professors of violent writings.¹²⁴ Again, as at Columbine and Beslan, the stovepiping of critical information prevented sharing between law enforcement, school officials, and mental health. Critical mental health records are not necessarily shared between institutions, yet it is a common practice to request and receive immunization records. The issue of personal privacy is an important one but at what cost?¹²⁵

3. Family Reunification

Traumatic incidents involving children are emotional events and up-front planning on rejoining families is an important consideration. A common theme in nearly all case studies was the problem of family reunification in the disaster's aftermath. The longest hospitalized patient from the Our Lady of the Angels fire, Irene Mordarski, had her name misspelled on the hospital admittance chart. This created significant anguish for her parents, who were already searching for their other two daughters. They would end up at three other hospitals and the morgue before finally finding Irene at 10:00 that night.¹²⁶

¹²⁴ Donna Leinwand, “Va. Tech More Secure a Year after Massacre, but Officials Stay Mindful of Campus Freedoms,” *USA Today*, April 16, 2008.

¹²⁵ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 38.

¹²⁶ Cowan and Kuenster, *To Sleep with the Angels. The Story of a Fire*, 110-111.

In the aftermath of Beslan, there was a great deal of chaos with numerous injured or killed, unidentified. Bodies were laid outside in rows covered by plastic for family and friends to identify. Hundreds of children remained huddled in hospitals unclaimed by parents they would never see again.¹²⁷ Few school incidents have greatly demonstrated the importance of family reunification planning than Beslan.¹²⁸

The Russian government was roundly criticized for their mishandling of the Beslan incident with security forces receiving the greatest condemnation. From the beginning of the incident, they failed to provide a scene perimeter to aid in controlling hundreds of armed locals. This led to interference during the rescue operation as hostages and rescuers were caught in the crossfire and civilians were avoidable casualties. The Russian focus was on the enemy and not on security or school safety.¹²⁹

At VTU, as with most mass casualty incidents, obtaining information on the status of loved ones proved difficult. People did not know whether to show up at morgues, hospitals, or designated centers. Not to mention the media barrage. The spouse of a murdered faculty member saw members of the media descend on her home before his death had been confirmed.¹³⁰

One of the initial problems discovered at the Platte Canyon High School incident was the lack of a public information officer (PIO) assigned to the incident. The delay resulted in the media gathering information from students with cell phones that were often false and misleading. Parents and the media converged on the same location for information, which was not timely. Many parents became panicked and formed a mob outside of a Bailey Police substation. Neighboring Jefferson County, which had the

¹²⁷ Giduck, *Terror at Beslan*.

¹²⁸ Dorn and Dorn, *Innocent Targets - when Terrorism Comes to Town*, 31-32, 47.

¹²⁹ Ariel Cohen Ph.D., "U.S. - Russian Security Cooperation after Beslan," *Backgrounder*, no. 1809 (2004), <http://www.heritage.org/Research/RussiaandEurasia/bg1809.cfm> (accessed March 27, 2008).

¹³⁰ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 140.

experience of Columbine, finally arrived and assumed PIO responsibilities. By this time, erroneous information was spreading and the first priority became damage control.¹³¹

Natural disasters such as Hurricane Katrina will likely displace more families than any other type of disaster. With the aftermath of Hurricane Katrina, not since the Dust Bowl migration from the southern Great Plains region in the 1930s, have more people been displaced. The displaced were estimated at 770,000 with over 200,000 with chronic medical conditions unable to get their medications or medical care. Gulf residents ended up in all 50 states.¹³²

There are instances where even with insufficient resources and experience that the public health communities grasp the challenges early in the process to improve complex situations. Mental health services in Oklahoma City found the establishment of a Family Assistance Center (FAC) invaluable. Family members were very appreciative as they were able to receive information about the welfare of their loved ones. The FAC proved to be a focal point for social assistance, food, clergy services, child care and overall wellness. The media was used to announce that the FAC was the best place to find out about loved ones.¹³³

More than 12,000 professional rescue personnel and volunteers were involved in the rescue operations. The stress took its toll as rescue workers switched from life saving operations to removing bodies and body parts. Separate services were provided to offer stress management to first responders. When the Center closed, Governor Frank Keating placed the Oklahoma Department of Mental Health and Substance Abuse Services as the

¹³¹ Lori R. Hodges, *Platte Canyon High School Shooting After Action Report. Recommendations for Emergency Services Agencies Based on the Events of September 27, 2006 at Platte Canyon High School* (Fairplay, CO, December 31, 2006) (accessed October 25, 2007), 14.

¹³² Townsend, *The Federal Response to Hurricane Katrina: Lessons Learned*, 58.

¹³³ *Oklahoma City-Seven Years Later. Lessons for Other Communities*. (Oklahoma: Oklahoma City National Memorial Institute for the Prevention of Terrorism, 2002), <https://www.llis.dhs.gov/docdetails.do?contentID=19>, (accessed May 21, 2008), 19.

lead agency to conduct mental health crisis response services. On May 15, 1995, the Center became Project Heartland with support from FEMA and the Office for Victims of Crime.¹³⁴

On 9/11, the overriding objective for the New York Board of Education was to get 1.1 million children home and re-united with their families. From the time of the first plane hitting the tower at 8:46 a.m. to the return of children to their homes at 1 a.m. on September 12, it took approximately 16 hours to reunite children and their families.¹³⁵

4. Lockdown Considerations - Security

Security is very broad in scope and was a common theme in case study analysis; from both a physical and human perspective. The analysis will address lockdown considerations, and the human element of security, which is still the most crucial variable as technology alone will not thwart school attacks. Schools have a history of demonstrated safety initiatives but often after disasters have occurred. The fires at Collinwood and Our Lady of the Angels fire revealed numerous fire code conditions that would result in sweeping national changes of building and fire codes¹³⁶ Today, school security has been enhanced by fire sprinklers, smoke alarms, fire exits, and fire extinguishers are present in many schools. Modern fire code requirements in new school construction have largely taken care of the fire spread issue, and most importantly, fire deaths have been all but eliminated. No child has been killed in a school fire in the U.S. since the 1960s.¹³⁷

The success of fire prevention efforts have some wondering if the balance is equitable to newer threats of school violence. In any given year, dozens of students and employees are killed by acts of violence in American schools. In fact, children are dozens of times more likely to be killed by violence than fire, and thousands of times

¹³⁴ Responding to Terrorism Victims: Oklahoma City and Beyond, 1-5.

¹³⁵ Markenson, Degnan and Thomas, *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*, 32-33.

¹³⁶ Cowan and Kuenster, *To Sleep with the Angels. The Story of a Fire*, 285.

¹³⁷ Brian Lake, “Publishers Letter,” *Homeland Defense Journal* 6, no. 2 (March 2008), <http://homelanddefense.epubxpress.com/> (accessed July 7, 2008), 1.

more likely to be seriously injured by violence as compared to fire. “If we can spend all that money and time preparing for fire, shouldn’t we spend time and money preparing for the thing that is far more likely to kill or injure a child?”¹³⁸

Lockdown drills, with consideration to the issue of lockdowns in schools; became law in the wake of the Columbine shooting. The goal of a lockdown drill is to protect students and staff from the immediate physical threats posed by natural disasters, hazardous material releases, or the presence of dangerous individuals on or in the immediate vicinity of the campus.¹³⁹

At VTU, law enforcement was roundly criticized for their actions and delay in notifying students and for not activating some form of lockdown. Supporting law enforcement’s decision, the Virginia Tech Review Panel in their report to Governor Kaine found that on researched reports of multiple shootings on campus over the past 40 years, no scenario was found where the first murder was followed by a second elsewhere on campus (Appendix). Largely ignored is that if Cho had stopped after the first two shootings, he might well have never been caught. Also ignored is that VTU is a community of 35,000 people. When a murder occurs in a city of 35,000, it would never be shut down.¹⁴⁰

Caution should be used when reacting to the most recent threats, such as school shootings and resolving one set of problems, while creating others that may arise as the yet foreseen future threats. There is still concern that the safety demands from shootings and terrorism, and incorporated lockdown drills, may swing the pendulum too far the other way in regards to safety. This is of particular concern to fire officials that have long battled with school officials to get the safety standards present in most schools today, versus the safety and financial concerns of the school that often perceive the safety efforts have been overkill.

¹³⁸ Giduck, *Terror at Beslan*.

¹³⁹ Dan Strohl, “School Lockdown Plans and Occupant Safety,” *Building Safety Journal* (2007), http://www.iccsafe.org/news/bsj/1007_School.pdf (accessed July 10, 2008), 33.

¹⁴⁰ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 79-82.

There are many school lockdown plans that intentionally prevent emergency alarm notification and evacuation, and doors may be locked from the inside of a classroom with the idea that it will prevent intruders from entering. Unfortunately, it will keep students from leaving and that is a violation of fire safety codes in the majority of U.S. jurisdictions. Some plans call for the chaining of exit discharge doors, also a violation.¹⁴¹ A general consensus of fire officials is not caring how schools keep people from getting into the building, as long as everyone can get out.

The mere appearance of security can dissuade attackers from targeting buildings that the perpetrators feel will limit their success. Therefore, the security of the school is a psychological as well as a physical improvement. It is difficult to argue against the need for security and fire officials may be viewed as arguing against security versus fire concerns. The parties in the debate will usually be fire officials locking horns with school officials, law enforcement, and security experts that may represent the schools or architects. All have an interest in school safety, though the means of achieving the security will differ. A balance of security and life safety codes can usually be met if the personalities of school, fire, and law enforcement officials avoid a personality power struggle and consider what they would want if their own children were in that school.

Lockdowns should not be viewed as a panacea of security from harm from those hell-bent on creating mayhem. A controversial question to ponder: are school populations blindly following a policy (lockdown) that may increase their danger by remaining in close proximity to the threat? If so, is it for fear of physical harm or legal repercussions? The essence of time and reaction are proven to be critical factors in survival as students in Ma'alon and Beslan survived by running, even jumping out windows. Are there times when teachers should get their students out of the school and running towards safety versus staying in the classroom down the hall from the gunman going room to room? After all, armed perpetrators are seldom interested in taking

¹⁴¹ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 33.

hostages. Rather, they tend to know that they are on a suicide mission and are seeking a high body count before they themselves are killed, or commit suicide, as seen in Platte Canyon, Columbine, VTU, Beslan, West Nickel Mines, and NIU.

Lockdown procedures are not universal and every situation will be different. The same holds true for threats. Platte Canyon High School and Columbine are in close proximity, both are considered school shootings, yet they are two totally different circumstances and analyzing in the same manner is an apples and oranges comparison. With no intent to minimize the circumstances, Platte Canyon happened to be a hostage situation within a school. Conversely, the intent of Harris and Klebold at Columbine was to kill as many as possible with no intent of taking hostages. In their discovered writings after their deaths, they talked of leaving the school to continue their rampage. They even mentioned the flying of a plane into a building. Even the active-shooter policies developed because of Columbine could have forced the shooters out of the school at the other end and into the community. The fact is there is no right answer. “It’s a judgment call the teacher has to make.”¹⁴²

In hostage situations, the decision to escape is a spur of the moment decision that may place the lives of others in jeopardy. Questions to be considered include: Is attempting escape more dangerous than staying? Should one attempt to rescue others? Can one desert one’s family? The problem is these questions are usually not answerable before triggering the deranged gunman’s reaction. The subsequent feelings of guilt and regret for taking the wrong action will create psychological outcomes that must be weighed.¹⁴³

5. First Responder Readiness

First responders as defined here include law enforcement, fire and emergency medical services (EMS) services, public health, special response teams including SWAT

¹⁴² Two SRO’s were contacted. Eric Overall with the Oakland County (MI) Sheriff’s Department and Division Chief, Dave Walcher with the Jefferson County (CO) Sheriff’s Department. Walcher was the Incident Commander during the Columbine High School shooting.

¹⁴³ O. Ayalon, “Community Mental Care for Victims of Terrorist Activities,” *Community Stress Prevention* <http://www.icspc.org/?CategoryID=268&ArticleID=205> (accessed August 8, 2008).

and hazardous materials (HazMat) teams, and non-traditional responders that include school officials. All will play a critical role in scene mitigation and their initial actions often have a dramatic impact on successful outcomes. Scene success will rely on overcoming cultural differences and contradictory scene objectives that have hampered operations, often leading to less communication and cooperative efforts. Incidents have sometimes resolved themselves in spite of first responder efforts.

Natural disasters are more widespread and often affect the first responder's family and community greater than the centralized targeted. A pandemic outbreak will challenge America's first responders, emergency facilities, physical resources, continuity planning, and family recovery like no other incident.¹⁴⁴ First responders and school officials must realize that their own resources will be seriously hampered by an infectious outbreak as a considerable percentage of employees will be out of service from illness.

Emergency preparedness and planning has often paid insufficient attention to the psychological dimensions of disasters. Mental health services have not been widely used in the aftermath of disasters, and are often perceived to be unhelpful to people more in need of concrete goods and services.¹⁴⁵

There is a tendency among mental health organizations in America to focus on the needs of emergency workers instead of victims, though both will require assistance. Even when victims are given consideration, the focus is generally narrow and does not always include family, friends, and others that are emotionally affected by the disaster. Intervention also tends to focus on the short-term needs of victims rather than long-term recovery.¹⁴⁶

¹⁴⁴ Francisco Cai and others, *Community Resiliency through Schools. Social Innovation and Entrepreneurship: Saving Lives in the Next Pandemic*. (Stanford University, June 7, 2007), http://sie.stanford.edu/1/reports/community_resiliency.pdf (accessed April 17, 2008).

¹⁴⁵ David Hutton, *Psychosocial Aspects of Disaster Recovery: Integrating Communities into Disaster Planning and Policy Making* (Institute for Catastrophic Loss Reduction, 2001), <http://www.iclr.org/pdf/research%20paper%2016%20-%20paper%202%20david%20hutton.doc.pdf> (accessed May 3, 2008), 1-9.

¹⁴⁶ Terri L. Tanielian and Stein, Bradley D., M.D. Ph.D., *Understanding and Preparing for the Psychological Consequences of Terrorism* (Rand Corporation, 2006), 8.

The mental health actions at recent mass casualty incidents are positive indicators that the trend is changing. Mental health has played a prominent role after Oklahoma City, Columbine, 9/11, and more recently, the shooting in West Nickel Mines, Pennsylvania, and the campuses of VTU and NIU.

When violence or terrorism is involved, law enforcement will be the primary lead agency.¹⁴⁷ Their four basic functions at mass casualty incidents beyond the basic tenet of providing life safety will be:

1. Traffic control. Both at the scene itself and the ingress and egress routes for other emergency personnel.
2. Crowd control. Uninjured and uninvolved people have a tendency to interfere with emergency operations, or become injured by dangers still present at the scene.
3. Criminal investigation. The emergency may have been caused by an intentional criminal act and scene preservation is necessary to protect any evidence.
4. Death investigation. Responsibility depends on jurisdiction and if the event was a criminal act.¹⁴⁸

The issue of crowd control is a glaring problem for first responders, primarily from law enforcement. Problems arise in dealing with the human element of perimeter control of gathering crowds. Tied in very closely with family reunification, perimeter control is a physical concern that may compromise emergency operations; thereby, threatening the safety of first responders and school victims. The issue of crowd security was significant regardless of natural or manmade disasters. Firefighters were physically assaulted at Collinwood and Our Lady of the Angels fires.

Understandably, the anguish of the parents was immeasurable as many were unaware of their children's whereabouts and no rescue efforts by others would suffice. In the aftermath, much of the anger was aimed at the fire department for perceived inattention to fire code enforcement to the known fire code violations.

¹⁴⁷ The FBI will determine if a crime is terrorism. If deemed terrorism, the FBI will be the lead law enforcement agency.

¹⁴⁸ Charles Simpson and Marty Sanford, *Law Enforcement Response to Multi-Casualty Incidents* (Rancho Cordova, CA: Governor's Office of Emergency Services. Law Enforcement Branch, January 21, 2003), <https://www.hSDL.org/homesec/docs/infra/nps17-111204-06.pdf&code=200dab70d7314460145f4167645acde8> (accessed April 14, 2008), 3,

Understandably, even law-abiding citizens may disregard command operations when their children are in harm's way. No amount of caution tape will restrain parents from doing what they think is best to secure their child's safety; especially when the actions of first responders will not be swift enough to mitigate the danger. Crowds will overwhelm scene and hamper operations by requiring additional resources for crowd management. There will always be mass confusion during a mass disaster. Removing the crowd as a concern is easier said than done, but often plans are not even in place to consider the rush of a panicked population that have their children in harm's way.

While school resource officers, also known as liaison officers, have existed at some schools before Columbine, their presence became commonplace across the country afterwards. The lacking clarity of responsibility and the expected nontraditional functions for School Resource Officers (SROs) was a concern at Columbine. SROs are expected to act as friends, consultants, and public relations representatives; roles that are traditionally outside the purview of law enforcement. Jefferson County school officials acknowledged that some principals and staff members worked very close with SROs, and treated them as counselors or assistant principals. Staff resented the presence of law enforcement in the schools and intentionally omitted SROs from information on administration matters, including safety concerns or disciplinary problems.¹⁴⁹

The Columbine Review Commission concluded that the primary task of SROs is to protect the public safety and enforce the law. SROs are considered to be first responders and should be trained in rapid deployment tactics. The Jefferson County Sheriffs Office used SROs before Columbine and continues to use them. The SRO at Columbine at the time of the shooting was fully trained as a patrol deputy with 15 to 20 years experience.¹⁵⁰ School administrators with all legal information that is required to maintain the safety of the school, including student's records, should also include SROs.¹⁵¹

¹⁴⁹ *The Report of Governor Bill Owens' Columbine Review Commission*, 88.

¹⁵⁰ Personal communication with Dave Walcher, Division Chief of Jefferson County Sheriffs Office and Incident Commander at Columbine High School (April 20, 1999) on August 11, 2008.

¹⁵¹ *Ibid.*, 89.

The absence or fractured approach in using the incident command system (ICS) was a common problem at many school incidents.¹⁵² From the Littleton Fire Department's perspective at Columbine High School, the most complex issue during response was attempting to coordinate with law enforcement operations. After initial confusion, they began working collaboratively and worked together very well.¹⁵³ Local law enforcement had two to three different sets of priorities and two to three sets of operations and utilized a "hybrid ICS" because of the rapid engagement of first responding officers with the two gunmen that prohibited.¹⁵⁴

Most law enforcement agencies have since gone through mandated ICS training. Pessemier questions the metrics in changes brought about from ICS training, not just for law enforcement, but for all first responders required to go through ICs, and how that translates into practice out in the street. "What's changed and how do you measure that? What were you doing before, what are you doing now and how has that training made the difference?"¹⁵⁵

Those not involved at the scene but still playing a critical role are emergency dispatchers. At VTU and Columbine, dispatchers were on the other end of the phone line as chaos ensued around the callers. Often, a forgotten component of preparedness planning, the message delivered or information shared can have life saving or traumatic consequences. Their instructions to stay still when the victim should flee or flee when they should stay still can result in unnecessary deaths. When in doubt of the situation, dispatchers should just be reassuring.¹⁵⁶

¹⁵² ICS evolved from the fire service in the early 1970s. The ICS model cannot be fairly applied to incidents such as the Our Lady of the Angels and Collinwood fires.

¹⁵³ Interview with Bill Pessemier.

¹⁵⁴ Personal communication with Dave Walcher.

¹⁵⁵ Interview with Bill Pessemier

¹⁵⁶ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 99.

At Beslan, security forces failure of effective incident command that resulted in mismanaged objectives, ineffective transfer of command, and errors in the dissemination of public information and intelligence, all contributed to the tragedy.¹⁵⁷ One of the problems identified in Beslan was the absence of command and control. The top military commander acknowledged the absence of planning to rescue hostages. In fact, 48 hours after the school was seized, Russian Special Forces were training 30 kilometers away from the school. When the firefight began, rescuers only had two or three armored personnel carriers to use as shields, and were pinned down by the terrorists' heavy fire. The elite Alfa and Vityaz forces lost 10 men.¹⁵⁸

One of the unforeseen lessons realized after the Columbine response is the importance of developing an operational network with law enforcement, which became a critical element with the fire department's EMS efforts. At Columbine, law enforcement was taking shooting victims out to their patrol cars and then driving victims to fire department triage areas where they were treated. Typical of many communities throughout the U.S., police and fire agencies have minimal operational experience with each other, less the routine, daily calls. There is even less training and communications exercises. Operational Networks beforehand are all about building relationships with key people and different organizations that you are going to have to work with when a catastrophic disaster occurs. Building that relationship ahead of time will improve operations.¹⁵⁹

Developing operational networks in advance will enhance agency and individual competence and confidence. The result will be improved working relationships, coordinated resources, and sustained effective response that will have the agency more confident about their day-to-day operations.¹⁶⁰

¹⁵⁷ Peter Forster, "Beslan: Counter-Terrorism Incident Command: Lessons Learned," *Homeland Security Affairs* 2, no. 3 (October 2006), <http://www.hsaj.org/?fullarticle=2.3.3> (accessed May 12, 2008), 1-7.

¹⁵⁸ Cohen, *U.S. - Russian Security Cooperation after Beslan*, March 27, 2008.

¹⁵⁹ Interview with Bill Pessemier.

¹⁶⁰ Ibid.

One of the positive outcomes from Columbine was the development of new partnerships with schools and a closer relationship with law enforcement; particularly those that were directly involved in the response. It would have been of great benefit if the SWAT teams, EOD technicians, and fire/EMS personnel at Columbine had been able to train in joint operations. Where joint training is especially critical is in the interface of the law enforcement teams and the EMS units.¹⁶¹ Firefighters did not begin carrying weapons, but they were trained to become SWAT paramedics for future active shooter situations.¹⁶²

One of the components of ICS is knowing the resources available during mass casualty incidents that will be required from multiple disciplines. VTPD had understood that they could not handle a major event with their limited resources and had entered into a mutual aid agreement with the Blacksburg Police Department (BPD). Both agencies trained together frequently, including practicing the active shooter situation in a campus building.¹⁶³

First responders will also have to deal with the psychological recovery of mass casualty incidents. Recovery can be hampered by others that refuse to let go of the tragedy. As the Jefferson County Sheriffs Department Incident Commander at Columbine, Dave Walcher says a week does not go by where someone is not bringing up the shooting at Columbine. He expects the reminders to intensify as the tenth anniversary approaches in April 2009.¹⁶⁴ Similar to Our Lady of the Angels, many of the law enforcement and fire department personnel at the scene had children or knew other teens that attended Columbine High School, which added significantly to responder stress levels.¹⁶⁵

¹⁶¹ *Wanton Violence at Columbine High School*, 33.

¹⁶² Interview with Bill Pessemier.

¹⁶³ *Mass Shootings at Virginia Tech, April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*. (Virginia: Virginia Tech Review Panel, August 2007), <http://www.governor.virginia.gov/TechPanelReport-docs/FullReport.pdf> (accessed February 12, 2008), 11.

¹⁶⁴ Personal communication with Dave Walcher- Jefferson County Sheriffs Department Incident Commander at Columbine on August 11, 2008.

¹⁶⁵ *Wanton Violence at Columbine High School*, 19.

First responders may need an outlet to help understand and process their reactions to disasters. Following any major fire/rescue (and law enforcement) incident, there is an immediate need for affected personnel to have an outlet for understanding and processing their reactions to the event.

CISD is Critical Incident Stress Debriefing and is an immediate intervention for first responders within three to five days of a traumatic event that seeks to relieve stress with the goal of mediating or avoiding long term pathology. It provides a forum where the department members can express their concerns and feelings about the incident and address their issues.¹⁶⁶

The intervention of CISD, now revamped as CISM or Critical Incident Stress Management, where CISD remains the central and defining signature intervention, has come under heavy scrutiny for its lack of empirical evidence demonstrating efficacy, or any significant benefit. In fact, there are many psychologists that suggest the use of CISD may do more harm than good. Five areas of concern include:

1. the lack of choice
2. poor timing
3. retraumatizing the victim of terror
4. vicarious traumatization
5. superficiality

Other findings conclude that psychological debriefing should not be provided to individuals immediately after trauma...Consensus can be found in providing comfort, information, and support, play useful roles in one's immediate coping needs. There is also no evidence that psychological debriefing is a useful treatment for prevention of PTSD after traumatic incidents.¹⁶⁷

¹⁶⁶ *Wanton Violence at Columbine High School*, 43.

¹⁶⁷ Bongar, *The Psychology of Terrorism. Defining the Need and Describing the Goals*, 6-7.

Despite the findings questioning CISD, first responders have often found solace in providing the service to their personnel. When asked the most important takeaway in the aftermath of the Our Lady of the Angels, survivor Michael Mason replied, “The importance of getting some form of CISD,” which was not available in 1958.¹⁶⁸

One of the lessons from the Platte Canyon incident is that CISM is a tool that can be helpful, but it can cause more harm if not used correctly. Managing attendance became difficult as there was confusion on which responders needed the debriefing the most. Adding outside agencies and citizens changed the meaning of CISM dramatically.¹⁶⁹

On the evening of the Columbine High School shooting, most of the Littleton Fire Department personnel returned to their stations by approximately 5 p.m. Critical incident stress debriefings took place that evening at the fire stations, and continued incrementally for months.¹⁷⁰ The Littleton Fire Department had used CISD at least once before Columbine when an EMS medical helicopter lifted off from an emergency scene, touched high-power lines and crashed, killing the entire crew. CISD services were utilized after the Columbine incident as well. One of the unexpected surprises for Pessemier was the developed animosity between firefighters that were not directly involved with the scene response towards those that were. There was an underlying animosity because of the great deal of attention the responding firefighters received. “I was surprised and didn’t think it would happen. We had to reevaluate what we were doing for the department as a whole instead of just those that responded to the incident.”

¹⁶⁸ Interview with Michael Mason.

¹⁶⁹ Hodges, *Platte Canyon High School Shooting After Action Report. Recommendations for Emergency Services Agencies Based on the Events of September 27, 2006 at Platte Canyon High School*, 4.

¹⁷⁰ *Wanton Violence at Columbine High School*.

Following Columbine, a few problems were encountered by the Littleton Fire Department. Primarily, the involvement of those first responders that were not on duty that day, or who worked the incident from a remote location, with those firefighters from the A shift that were directly involved at the school. Their involvement, and therefore, their needs were different.¹⁷¹

There will be different needs for different individuals. To be effective, there needs to be a pre-event understanding of what CISD is all about, when and why it should be used, what it is intended to do, and what the limitations are. Understanding these conditions up front will allow the asking of people what they need, instead of telling them what they need. “Ask them very direct, probing questions, making sure they know what they need and are not hiding behind machismo. Ask, what can we do for you? It’s not a cookie-cutter approach and individuals will have different needs.”¹⁷²

SCHOOL	Lack of Info Sharing	Family Reunification	Time Criticality	Crowd Control Issues	Active Shooter Policy	Mental Health Services Available
Collinwood		✓	✓	✓		
New London		✓	✓			
Our Lady of the Angels	✓	✓	✓	✓		
Thurston (Springfield)	✓		✓			
Columbine	✓	✓	✓	✓		✓
Platte Canyon (Bailey)	✓	✓			✓	
W. Nickel Mines (Amish)					✓	✓
VTU	✓	✓	✓		✓	✓
Northern Illinois Univ.					✓	✓
Ma’alot, Israel		✓	✓			
Beslan, Russia	✓	✓	✓	✓	✓	✓

Table 1. Case study analysis using critical variables. Blacked out areas indicate the variable is either a) not applicable, i.e., school shooter policy in relation to school fires or b) information was not discovered in research.

¹⁷¹ *Wanton Violence at Columbine High School*, 44.

¹⁷² Interview with Pesseimier.

B. CHAPTER SUMMARY

The preceding variables all have an impact on the duration of trauma for victims of mass casualty incidents. The teacher's initial actions, the ability to egress the facility, the ability to get families back together, and the first responder's readiness, all are critical components to scene mitigation, removing victims from the danger, and enabling recovery for victims.

Regarding the threat of natural disasters and pandemics, the U.S. has been fortunate that the lessons learned data is scarce as pandemics do not occur on a regular basis. However, no disaster will have a greater societal impact on a global scale, and the occurrence of both, natural disasters and pandemics, has proven inevitable over history.

The cultural silos between agencies that restrict vital information flow have compromised student and faculty safety. Security issues and the fear of legal repercussions play a role in information sharing. Potentially dangerous students could be identified by a quid pro quo between school personnel and law enforcement officials by implementing procedures that would share all criminal records of students within the school district that they are enrolled.

Providing timely information to the public is imperative and experience has shown that an informed public will cooperate with officials, thus allowing them to perform their duties. This requires first responders to have the adequate resources on scene in the initial response that are not involved in rescue to fulfill other command roles, including public information.

Operational preparedness manuals need to be dusted off bookshelves in schools and not cut and pasted documents from other districts. First responders understand the utilization of ICS principles improve response. Whether they decide to use the model may be a different story. Security and technology will constantly improve and the balance between security and fortress-like conditions, or real-time notification versus cell phones in schools will long be debated. At Platte Canyon High School in Bailey, Colorado, officials credit the lessons learned from Columbine (including utilizing first

responder personnel from the Columbine incident) and the ongoing training of the Park County Sheriff's SWAT team, and strong relationships developed with all first responder agencies, and ongoing training provided to staff members of the school.¹⁷³

From their new construction after the Columbine incident to their development of the active shooter program, and establishing a School Resource Officer in Platte Canyon High School, the disaster was largely mitigated from being the potential disaster it could have been.¹⁷⁴ Key lessons learned from the incident include:

1. Rural areas are not immune to violence in U.S. communities, especially with regards to schools.
2. The Incident Command System works best when utilized to its full capacity.
3. Federal, state and local partnerships are essential for successful response and recovery operations following a large-scale incident.
4. Interoperable communications must be strengthened and supported to overcome multi-jurisdictional communications differences and to strengthen mutual aid response.

Strong media and public relations are a key ingredient to successful outcomes.¹⁷⁵

One variable that requires further analysis and is the crux of this thesis is the issue of psychological recovery. The paucity of research on psychosocial factors including recovery makes the psychological recovery variable the most difficult to overcome. It is a variable many do not want to consider since it means accepting the fact that schools may be targets, including intentional targets of deranged gunmen and terrorists. It also means that children have suffered emotionally (and physically), and adults were not able to prevent them from being harmed. When disasters occur, practically everyone is unprepared for the short and long-term recovery. Yet, educators, parents, first responders, and the entire community will be affected by a disaster that involves mass

¹⁷³ Personal communication with Dave Walcher.

¹⁷⁴ Lori R. Hodges, *Platte Canyon High School Shooting After Action Report. Recommendations for Emergency Services Agencies Based on the Events of September 27, 2006 at Platte Canyon High School* (Fairplay, CO, December 31, 2006), 4.

¹⁷⁵ Hodges, *Platte Canyon High School Shooting After Action Report. Recommendations for Emergency Services Agencies Based on the Events of September 27, 2006 at Platte Canyon High School* 10.

casualties at schools. Schools and the response community have emphasized consequence management without significant attention to long-term recovery. Preparedness and recovery from a psychosocial standpoint that has largely been omitted from practical application and debate will be addressed.

V. THE PSYCHOSOCIAL IMPACT OF MASS CASUALTY INCIDENTS ON FAMILY, SCHOOLS, AND THE COMMUNITY

It is worth noting that not all variables have a role in all incidents. Limitations include the absence of psychological recovery data from incidents that occurred before the 1970s, such as the fire disasters that happened at a time when there was less consideration focused on psychological recovery. Diagnoses of Posttraumatic stress disorder (PTSD) did not manifest until 1980. There were also research limitations on psychological recovery as reports and journals placed an emphasis on the preparedness and response (Platte Canyon High School). This does not imply that there was an absence of psychological trauma. To the contrary, the examples show that these events can happen anywhere and there will be many psychological burdens to bear.

The psychosocial elements of disasters and the manner in which humans respond to them only began to take shape in the 1980s. Today, there is extensive literature documenting the vulnerability and practical implications for disaster planning and response. Outside of the social sciences, there appears to be a lack of interest to address the long-term implications of mass casualty recovery for the school community. There are no new ways of harming children in the school setting, but there are new ways to cope with the consequences that enhance physical and psychological recovery. By addressing the psychological reactions to disasters, educators, first responders, and family members can better understand the process of recovery.

Research has shown that the consequences of mass casualty disasters will be significant from natural or manmade threats. When considering the long-term psychosocial impact on victims, the event does not have to be terrorism related to cause long-term suffering. It is important to remember that all major incidents are not only physical events; they are also psychological and social events.¹⁷⁶

¹⁷⁶ Jane Eyre Ph.D., *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response* (United Kingdom: Department for Culture, Media and Sport, October 2006).

Schools should prepare to minimize adverse impacts on the school population, whether or not they are the intended target. The attacks of 9/11, the Oklahoma City bombing, and natural disasters like Hurricane Katrina demonstrated that proximal threats could impact student safety and need to be considered in planning through threat assessments, response coordination and recovery capabilities.

History suggests that there may be many more psychological victims than physical victims in a terrorist attack.¹⁷⁷ A partial history of threats that face schools has been examined and the current and future threats have been considered. Chapter IV addresses the psychological and psychosocial issues that affect children and their schools. This thesis is drawn from a tactician's perspective as a first responder. There is no intent to depict an expertise in the complex world of psychology and the social sciences. Taking the aforementioned case studies, this chapter adds the variable of psychological recovery for analysis.

A. PSYCHOLOGICAL RECOVERY

The recovery process following a disaster can have a long-term impact on survivors. In terms of mental health recovery, society has come far since the fires and disasters of decades ago. Recovery was handled in a much different manner then. The comments of survivors reveal the emotional scars left years later. The culture of the day within the school structure and amongst families is that it just was not talked about.

The children at Our Lady of the Angels and New London did not have the psychological resources available today. In fact, the norm was to be stoic and not discuss the incident, which is still a characteristic in some cultures as was the case with children in North Ossetia. Decades later, many survivors still suffer the psychological wounds of repressing their experiences. Talking about the fire and openly expressing their feelings was almost taboo for the children and adults. As a consequence, many never learned how to cope with the psychological effects of the fire. For over forty years following Our

¹⁷⁷ Robyn Pang, "After the Attack: The Psychological Consequences of Terrorism," *Perspectives on Preparedness* August 2002, no. 7, http://www.mipt.org/pdf/ksg_popno7.pdf (accessed December 8, 2007).

Lady of the Angels, no psychological tools to aid in recovery were available. The formation of the *Friends of OLA* website provided an avenue for survivors to discuss the event and help in healing.¹⁷⁸

As a first grader at the Our Lady of the Angels school, six-year old Michael Mason remembers the fire he survived fifty years ago as if it was yesterday. Before the fire, he recalled the occasional fire drill or civil defense drills common during the early years of the Cold War, but nothing prepared him for December 1, 1958. The panic in the nun's faces was apparent as they hurried children out of the first floor classrooms. "It was utter chaos and panic. It was insane, the breaking glass, the screaming children, and seeing children jumping from windows." Firefighters were grabbing and dropping kids from their belt buckles.¹⁷⁹

Mental health services have come far in the decades since these tragic fires. More needs to be done to address the newer threats of school shootings and terrorism. "They had to have some idea of what we were going through. They built a new school, but no one talked about the fire with the kids. No one ever came up to us to ask, 'How are you doing? How do you feel? What do you think of this?' "I really can't buy into the excuse they didn't know how. It's just amazing that nobody thought of helping these people."¹⁸⁰

After the explosion of the New London School explosion, survivor Joan Barton, a second-grader at the time recalls, "We were not allowed to talk about it at all." Barton still lives in New London. "You would think after 70 years, I'd learned not to cry. It was just too sad. Of course, now, they want you to talk about it because it helps you and everything. Maybe that's why I still cry."¹⁸¹

The children and first responders were not the only victims. The long-term impact was significant on the neighborhood as well. "I can remember playing with kids that I had never seen until after the fire." The trickle down effect was that the fire did not

¹⁷⁸ Interview with Michael Mason.

¹⁷⁹ Ibid.

¹⁸⁰ Cowan and Kuenster, *To Sleep wih the Angels. The Story of a Fire*, 251.

¹⁸¹ Isaac, *Faces, Forever Changed: School Blast Survivors Still Unable to Talk about those they Lost*.

just affect those kids that passed on. It affected those parents, grandparents. It disintegrated an entire neighborhood. “That neighborhood would still probably be together if it wasn’t for the fire. Eventually, the fire took its toll on the neighborhood and it fell apart as we all moved into the suburbs. It is now probably one of the worst neighborhoods in Chicago.”

There was no support system for families that all lived within a certain area of the school. There was jealousy and a lot of remorse that one student had lived and one had died. “You could literally walk down the street in the first couple weeks after the fire and hear mothers weeping.”¹⁸²

Many survivors still have a vivid recollection of children screaming, jumping, and the smell of the thick, black smoke. Some that were crowded at the windows still have issues with claustrophobia; others have difficulty looking at fire scenes on television newscasts. In general, they have a heightened awareness of their vulnerability. In places with crowds, they instinctively look for alternate exits and when staying in hotel rooms, do not stay in rooms higher than the second floor.¹⁸³

The psychological impact of fear from disease outbreaks is real. One in five Toronto residents reported avoiding Asian restaurants and stores, and 16 percent said they were avoiding public places because of SARS. In the U.S. where 70 cases were diagnosed with no deaths, citizens were not as likely to take precautions against SARS. If the SARS experience in Toronto occurred in the U.S. that could not be contained quickly, the economic impact would be significant in any major city where cases occurred. Also, as what happened in Toronto, as the cases increase, so does the fear.¹⁸⁴

Toronto residents understood the importance of quarantining and approximately 22% of Toronto residents had a friend or family member that was quarantined due to SARS exposure. About one-quarter of those quarantined reported two major problems:

¹⁸² Interview with Michael Mason on July 16, 2008.

¹⁸³ Cowan and Kuenster, *To Sleep with the Angels. The Story of a Fire*, 253-254.

¹⁸⁴ Survey Finds SARS having a Significant Psychological, Economic Impact on Lives of Toronto Residents.

(1) emotional difficulties relating to the confinement (11 percent) and not getting paid because they had to miss work (10 percent). On a positive note, three-quarters of Toronto residents did not find the quarantine to be a major problem and the public's awareness were indicative that health education efforts through media communication worked.¹⁸⁵

Research data from Hurricane Katrina will provide a plethora of recovery data and psychological impact studies for decades to come. To date, post-Katrina studies in St. Bernard and New Orleans parishes reported that over 31 percent of returning children could be categorized as clinically depressed.¹⁸⁶ While there were few differences in their emotional well being, nine months after the storm the evacuated youths were more prone to participate in risky behaviors and fewer protective behaviors, such as school sports or other extracurricular activities, than their non-evacuated peers.¹⁸⁷

Children were forced to attend multiple schools averaging two to nine. Families were forced to relocate an average of 3.5 times with some as many as nine times. The constant movement erodes familial continuity, prevents reestablishment of education and employment relationships. In the months and years afterwards, chronic psychological and physiological stress reactions can develop.¹⁸⁸

School shootings such as Columbine resulted in a mass media response rarely seen. The images broadcast around the world as it happened were shocking as media in helicopters and on the ground witnessed children critically wounded in windows, and escaping the building with their hands above their heads, as law enforcement dealt with

¹⁸⁵ Survey Finds SARS having a Significant Psychological, Economic Impact on Lives of Toronto Residents.

¹⁸⁶ Inka Weissbecker and others, "Psychological and Physiological Correlates of Stress in Children Exposed to Disaster: Current Research and Recommendations for Intervention," *Children, Youth and Environments* 18, no. 1 (2008), 30-70, www.colorado.edu/journals/cye (accessed April 22, 2008), 34.

¹⁸⁷ Peek, *Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction*, 7.

¹⁸⁸ Weissbecker and others, *Psychological and Physiological Correlates of Stress in Children Exposed to Disaster: Current Research and Recommendations for Intervention.*, 32.

perpetrators at large. The psychological impact was significant. In the first two weeks following the incident, professionals in mental health provided more than 50,000 sessions debriefing and counseling sessions to over 15,000 people.¹⁸⁹

The mental health services at VTU focused special attention on the many people directly impacted by the event. Dozens of presentations on trauma, post-incident stress, and wellness were presented to hundreds of faculty and student groups. The university's Cook Counseling Center knew that graduation several weeks later would be a difficult time for many people. They sent 50 mental health professionals to the graduation ceremonies and developed resource materials on resilience and rebounding from trauma.¹⁹⁰ This may be evident of mental health interventions improving.

While VTU showed readiness with mental health needs, they also experienced problems that schools at grade school or university level could expect from mass casualty incidents. The day after the shooting, VTU took action to provide family assistance but the center set up nearby failed for a few reasons. First, there was a lack of leadership and coordination among service providers. Second, though well intentioned, many of the University volunteers were unqualified and unable to provide answers or guide families to the resources they needed.¹⁹¹

Following the Beslan siege in Russia, the need for psychosocial support was immediately recognized. By mid-October, 558 people were receiving individual psychosocial counseling and support provided to groups of victims, relatives and staff.¹⁹² Parents send their children to school on a nearly daily basis with the expectation that the school will provide for their safety. When schools and others fail at this task, school officials, first responders, and government officials can expect to be blamed for their lack

¹⁸⁹ *The Report of Governor Bill Owens' Columbine Review Commission*, 132.

¹⁹⁰ *Mass Shootings at Virginia Tech. April 16, 2007. Report of the Review Panel. Presented to Governor Kaine-Commonwealth of Virginia*, 141.

¹⁹¹ *Ibid.*, 3.

¹⁹² Johan Von Schreeb, Azret Kalmykov and Hans Rosling, "Emergency Care Following at the Terror Attack in Beslan, North Ossetia, Russian Federation, 2004," *International Journal of Disaster Medicine* 2 (2004), [http://nps.illiad.oclc.org/illiad/illiad.dll](http://nps.illiad.oclc.org/illiad/illiad.dll/exchweb/bin/redir.asp?URL=http://nps.illiad.oclc.org/illiad/illiad.dll) (accessed April 29, 2008), 44,

of response or attention to the victims they are charged with protecting as they were at Our Lady of the Angels, Columbine, and VTU. Blaming the perpetrator alone is too easy and while officials did not cause the disaster, they play a dramatic role in its mitigation.

After the Our Lady of the Angels fire, many survivors and family members have long blamed the Chicago Archdiocese for failing to recognize the incident, and for failing to prosecute the boy that confessed to the fire three years later. The neighborhood grieved in their own way and in the process, blame was placed on several innocent people including the janitor for bad housekeeping, and the fire department for improper inspections. People wanted answers though none could be given except blame being tossed everywhere. Shortly after the fire, the building was torn down and a new one built. “There was not even a plaque on the new school.”¹⁹³

Receiving much of the blame in Beslan was the Director of Beslan School No. 1, Lydia Tsaliyeva. She was accused of being complicit in the assault, even allowing terrorists to hide weapons in the school prior to the attack. What appears to be ignored is the fact that Lydia was a hostage along with her sister and three of her grandchildren. She was also injured in the initial assault and hospitalized weeks after the siege. Six months following the siege, she was still in hiding, fearing for her life.¹⁹⁴

The Amish school in West Nickel Mines, Pennsylvania was cited for the primary reasons of a rapid law enforcement response and the unique recovery following the shooting. It is not the manner in which society generally considers as a process of recovery from grief. The media and the general public did not understand how the Amish could consider so quickly, the act of forgiveness. There is a great deal of misunderstanding on the meaning of forgiveness and many criticized the Amish reaction, including many in the media after the shooting. The restrained Amish reaction was unnatural, and therefore, inappropriate.¹⁹⁵

¹⁹³ Interview with survivor, Michael Mason on July 16, 2008.

¹⁹⁴ Giduck, *Terror at Beslan*, 238, 429.

¹⁹⁵ Kraybill, Nolt and Weaver-Zercher, *Amish Grace. How Forgiveness Transcended Tragedy*, 237, 91-95.

The Lord's Prayer is prominent in Amish culture and the first thing Amish children learn, in both English and German. Unlike most Americans, the Amish emphasize the authority of the community, and place themselves under the authority of the church over the freedom of the individual. The first two verses of the Lord's Prayer embody the fundamentals of Amish forgiveness. 'For if ye forgive men their trespasses, your heavenly Father will also forgive you: But if ye forgive not men their trespasses, neither will you forgive your trespasses" (Matthew 6: 14-15). The Amish believe if they do not forgive, they will not be forgiven.¹⁹⁶

Forgiveness is psychological because the forgiver is personally changed by the release of resentment. Forgiveness is also social because it involves another person. Forgiveness does not mean pretending a wrong did not occur, it is not forgetting what has happened, and it is not condoning or excusing it. Forgiveness does not mean pardon, allowing the wrongdoer to be free from suffering or consequences from their actions. Finally, it is not to be confused with reconciliation, which allows the restoring of a relationship. Advocates maintain that forgiveness means admitting that a wrong was done and that it should not be repeated.¹⁹⁷

One should pause if thinking the Amish parents do not grieve as much for the death of their children as the non-Amish do. Like all people coping with the loss of a child, the Amish pondered the meaning of their loss and shed many tears in their homes. At the funerals, they committed their children to God and believed their daughters were now in heaven. The presence of faith and the ability to forgive in no way made the death of a child easy.¹⁹⁸

One of the major stumbling blocks to peace in Northern Ireland has been the memories of conflict, both current and from the distant past, that are easily activated in Northern Irish society. For the historical cycle of violence and revenge to end, forgiveness must move further up the agenda. Forgiveness is more a socio-political than

¹⁹⁶ Kraybill, Nolt and Weaver-Zercher, *Amish Grace. How Forgiveness Transcended Tragedy*, 91-95.

¹⁹⁷ Donald B. Kraybill, Steven M. Nolt and David L. Weaver-Zercher, *Amish Grace. How Forgiveness Transcended Tragedy* (San Francisco: Jossey-Bass, 2007), 127-131.

¹⁹⁸ Ibid., 155.

a religious factor. Religion has actually been found to be a weak predictor of forgiveness whereas in-group identification and especially out-group attitudes were strong predictors. As would be expected, the more involved in the violence (the troubles) the less forgiving they tended to be.¹⁹⁹

Kidnapping, shooting, and torture are traumatic events that present even greater challenges to children and communities than disasters that are known and somewhat predictable. They are also intentional. The taking of hostages may occur from lone gunmen as in Platte Canyon or the Amish school in Pennsylvania; or as an act of terrorism as in Ma'alon and Beslan. Though the former does not constitute the definition of terrorism, no one would say the children involved were not terrorized to the level of the latter. The Amish and Platte Canyon hostage-taking situations remind the U.S. that torture can and will occur in the U.S.

There are three factors that distinguish these types of trauma from other forms of violence: 1) victims are typically held against their will, 2) the injury is intentional and personally directed and 3) pain is often inflicted for the purpose of punishment, coercion or perpetrator pleasure.²⁰⁰

The shooting at NIU may be as indicative of any recent school event that society is becoming desensitized to mass casualty shootings. The seven deaths are no less tragic, but the vulnerability others feel along with the media coverage, will be reduced significantly than when younger children are victimized. Many college students have left the comforts of home and the necessity of care from their parents, and adults, even young ones, are self-sufficient.

¹⁹⁹ Andrea Campbell, Ed Cairns and John Mallett, "Northern Ireland: The Psychological Impact of 'the Troubles,'" in *The Trauma of Terrorism: Sharing Knowledge and Shared Care, an International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 177-178, 181-182.

²⁰⁰ "The Impact of Kidnapping, Shooting and Torture on Children," Center for the Study of Traumatic Stress, <http://cstsonline.org/factsheets.shtml> (accessed October 19, 2007).

B. CHARACTERISTICS OF MASS CASUALTY DISASTER SURVIVORS

The mental health field has little experience understanding terrorism and generally relies on extrapolation of knowledge from related fields. So what is the anticipated response and recovery process for victims of natural disasters or intentional trauma? Natural and manmade disasters differ in their origin, predictability, duration, intensity, destruction, and recovery environment. Incidents involving mass violence are intentional, and therefore, more psychologically disturbing types of disasters; thus, their psychological consequences are frequently more severe.²⁰¹

The psychological response to terrorism attacks will be more intense than from natural disasters – even if the disaster is serious and large scale. The element of surprise and the inability to prepare for when and where the intentional attack may occur leaves people with greater vulnerability. Natural disasters such as hurricanes or earthquakes can be prepared for, while the intentional malevolence of terrorism can neither be effectively predicted nor prevented.²⁰²

Unlike natural disasters whose occurrences are easily understood by the public, causal attributions are largely absent following a terrorist attack. The location, progression, and duration of natural events are generally known or can be reasonably estimated. Schools, first responders, and mental health professionals have greater experience and know what to expect and know the actions to take to mitigate the incident.

Terrorism's impact will be greater than other threats and its impact on youth may occur in a variety of ways. Youth will experience terrorism based on their proximal contact with the incident along with media-based contact with terrorist attacks, and exposure to an extended climate of threat, expectation and alert. Each type of risk places the child at a heightened risk for distress, maladjustment, and the potential development of psychopathology.²⁰³

²⁰¹ Tanielian and Stein, Bradley D., M.D. Ph.D., *Understanding and Preparing for the Psychological Consequences of Terrorism*.

²⁰² Beutler and others, *The Need for Proficient Mental Health Professionals in the Study of Terrorism*, 32-34.

²⁰³ Comer and Kendall, *Terrorism: The Psychological Impact on Youth*, 180.

Being less mature, a child does not have the psychological mechanisms in place to understand trauma and they are more likely to be overwhelmed by the experience. As a result of events occurring in the midst of their development, these events are more likely to impact their psychological growth and maturity.²⁰⁴

In fact, upon occurrence, the coping process will include coping with the knowledge that the act could have possibly been averted. Coping will entail dealing with the reality that someone wishes to inflict immense harm, and that someone's life may be altered substantially in moments. Terrorism even differs from other manmade disasters such as transportation accidents and hazardous materials incidents because terrorism acts are based on low predictability, short duration, and a deliberate intent to harm and destroy.²⁰⁵

There are observed phases of crisis recovery from many that have been involved in, or survived disasters. The model developed by Zunin and Myers (1992), is used extensively by organizations involved in the planning and training for disaster response, including the American Red Cross. Mental health specialists following the Oklahoma City bombing found the victims mirrored these phases.²⁰⁶ The five phases are:

1. **Initial Impact** – Targeted violence toward a school or community will provoke shock, horror and disbelief.
2. **Heroic Period** – From the onset of rescue operations, the community will engage in altruistic kindness towards the rescuers, the survivors, and victims' families. By donating food, shelter, or money, people will look to help in anyway they can.
3. **Honeymoon Period** – There is a window of opportunity for schools to rebuild as numerous resources arrive and new relationships are developed. Promises are made in the desire to make the community whole again. Eventually, this period will end after several weeks as the realization sets in that rebuilding and recovery will be a long and difficult process.
4. **Disillusionment Phase** – Anger and depression are characteristic traits as the rate of healing will vary for the survivors. Some students will feel ready to move on while others have day-to-day difficulties. The blame

²⁰⁴ The Impact of Kidnapping, Shooting and Torture on Children, 2.

²⁰⁵ Ibid., 182.

²⁰⁶ The report refers to four phases, omitting the first stage, Initial Impact. Responding to Terrorism Victims: Oklahoma City and Beyond, 20.

game will arise as people ponder the possibility of preventing the incident and how the perpetrator should have been punished versus those that continue to support him.

5. **Reconstruction Phase** – This may take one to two years and sometimes longer. Many staff members after several school shootings reported an ability to move on after the freshman class at the time of the incident had graduated high school.²⁰⁷

The reconstruction phase was prominent at Thurston High School as many of the students found it difficult to return to the school cafeteria following the shooting. School administration helped children and staff cope by changing the appearance with a new paint color on the walls, new tables and chairs, thus changing the environment.²⁰⁸

Limiting ingress and adding school resource officers, or changing the school's appearance show students that they are being well cared for. Most students will find an emotional balance within six to eight months after the incident. Despite the best efforts, a small amount of staff and students may develop PTSD or depression that will require mental health treatment due to pre-existing factors in their lives.²⁰⁹ Community studies indicate that more than a third of children exposed to trauma such as violence and natural disasters meet the criteria for PTSD in the following weeks or months.²¹⁰

The conditions of PTSD and panic will be examined.

1. PTSD

Posttraumatic Stress Disorder (PTSD) is a mental health disorder that results from witnessing an event, such as a hazard or disaster that is particularly distressing and produces a cluster of symptoms that includes re-experiencing phenomena in the form of

²⁰⁷ Dorn and others, *Jane's Safe Schools Planning Guide for all Hazards*, 286-288.

²⁰⁸ Ibid., 288.

²⁰⁹ Ibid., 286-288.

²¹⁰ Weissbecker and others, *Psychological and Physiological Correlates of Stress in Children Exposed to Disaster: Current Research and Recommendations for Intervention.*, 33.

flashbacks or nightmares, psychic numbing or avoidance, and hyperarousal.²¹¹ Though PTSD was recognized as a psychiatric diagnosis in 1980, little was known about the impact of PTSD on children and adolescents.²¹²

Factors that will influence the chances of developing PTSD depend on the magnitude, duration, and severity of trauma exposure. The most important factor for PTSD to be considered is that the victim was exposed to the traumatic event. Otherwise, PTSD does not exist. Symptoms must endure for a minimum of one month for a diagnosis of PTSD to be possible.²¹³

Other studies have looked at the development of PTSD in post-terror victims. Most prevalent chances exist with bombings (34%), mass shootings (28%), and natural disasters (4-5%).²¹⁴ Four years after the 1995 sarin gas attack in Tokyo's underground system, more than half of the survivors still had symptoms consistent with PTSD.²¹⁵

With the SARS outbreak, prolonged durations of quarantine were associated with increased symptoms of PTSD and depression, 28.9% and 31.2%, respectively. Knowing someone with or direct exposure to someone with a diagnosis of SARS increased PTSD symptoms and those with children experienced higher rates of fear.²¹⁶

Mass violence such as terrorist attacks is likely to have a more severe impact than natural disasters. In a 1992 study by Solomon and Green, in a review of 80 different disasters, the National Center for Post Traumatic Stress Disorder (NCPTSD) reported that

²¹¹ Kevin R. Ronan and David M. Johnston, *Promoting Community Resilience in Disasters. The Role for Schools, Youth, and Families*, (New York, NY: Springer Science + Business Media, Inc., 2005), 56.

²¹² Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*.

²¹³ “Effects of Traumatic Stress after Mass Violence, Terror or Disaster,” National Center for PTSD, http://www.ncptsd.va.gov/ncmain/ncdocs/fact_shts/fs_effects_disaster.html?opm=1&rr=rr53&srt=d&echor=r=true (accessed August 3, 2008).

²¹⁴ “Effects of Traumatic Stress after Mass Violence, Terror Or Disaster,” National Center for PTSD, http://www.ncptsd.va.gov/ncmain/ncdocs/fact_shts/fs_effects_disaster.html?opm=1&rr=rr53&srt=d&echor=r=true (accessed August 3, 2008), 4-5.

²¹⁵ Enrique Baca and others, “Short and Long-Term Effects of Terrorist Attacks in Spain,” in *The Trauma of Terrorism: Sharing Knowledge and Shared Care, an International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 157-167.

²¹⁶ Hawryluck and others, *SARS Control and Psychological Effects of Quarantine, Toronto, Canada*, 1206.

67% of individuals who experienced mass violence compared to 42% who experienced natural disasters and 34% of those who experienced technological disasters suffered from severe psychological distress.²¹⁷ Following the Oklahoma City bombing and the 9/11 attack, girls exhibited significantly greater PTSD symptomatology than boys. Similar effects have been found in youth experiencing wartime stress.²¹⁸

Studies on children of war or terrorism including the Belfast riots and the ongoing conflict in the Middle East show the more direct a child lies in harm's way, the more severe the risk of PTSD. In the U.S., children are exposed to numerous traumas, but exposure to trauma from terrorism is uncommon.²¹⁹

Analyzing children for PTSD following disasters have become commonplace. A long-term follow-up study of adolescent survivors of a 1974 terrorist attack in Israel indicated that the adjustment in adult years was mediated by the extent of the injuries experienced. Seventeen years after the incident, the severity of injuries was positively associated with the symptoms of PTSD.²²⁰

In Beslan, a sample of 92 children and adolescents that were held as hostages were examined and found to be suffering from extremely severe trauma, demonstrating the main signs of acute stress disorder (ASD). A group of 22 children and their 20 caregivers were found to suffer from PTSD three months after the attack. A common theme found from caregivers' accounts were the children's fear of going back to school, and survivor's guilt. "He's afraid of going back to school. He doesn't want to go because he says that it might happen again."²²¹

²¹⁷ Pangi, *After the Attack: The Psychological Consequences of Terrorism*, December 8, 2007, 42.

²¹⁸ Comer and Kendall, *Terrorism: The Psychological Impact on Youth*, 189.

²¹⁹ Daniel Pine, Jane Costello and Ann Masten, "Trauma, Proximity, and Developmental Psychopathology: The Effects of War and Terrorism on Children," in *The Trauma of Terrorism: Sharing Knowledge and Shared Care, an International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005).

²²⁰ Baca and others, *Short and Long-Term Effects of Terrorist Attacks in Spain*, 157-167.

²²¹ Moscardino and others, *Narratives from Caregivers of Children Surviving the Terrorist Attack in Beslan: Issues of Health, Culture, and Resilience*, 1777.

Before the Oklahoma City bombing in 1995 and the events of 9/11, little research or funding was given to terrorism attacks in the U.S. In addition, most of these studies were conducted outside the U.S., in countries where terrorism attacks were more common. There is a tremendous need to evaluate the efficacy of proposed interventions. Little evidence based on prevention and intervention strategies for addressing psychological needs regarding terrorism events exists. This shortcoming of terrorism data does not preclude the need for action.²²²

Seven weeks after the Oklahoma City bombing, 14.7%, students did still not feel safe and 62.8% reported worrying about themselves or their families. In addition, while more than one-third of the students reported knowing someone killed in the explosion, only 6.8% sought counseling.²²³

High-level avoidance is the avoidance of places or situations that increase the risk for direct exposure to terrorism such as a city center, buses, and cafes. It is a primary symptom of PTSD and there were relatively low numbers of students receiving counseling in Oklahoma City, which suggests that many youths in need of services may be overlooked. Children may initially avoid discussing the trauma. Even brief interventions should be initiated by mental health professionals to assess symptoms and grief as the services may improve long-term outcomes.²²⁴

²²² K. Chase Stovall-McClough and Marylene Cloitre, “Traumatic Reactions to Terrorism: The Individual and Collective Experience,” in *Psychological Effects of Catastrophic Disasters: Group Approaches to Treatment*, eds. Leon A. Schein and others (New York: The Haworth Press, 2006), <http://www.amazon.com/Psychological-Effects-Catastrophic-Disasters-Approaches/dp/0789018411> (accessed July 29, 2008), 940.

²²³ M. D. Betty Pfefferbaum and others, “Posttraumatic Stress Responses in Bereaved Children After the Oklahoma City Bombing,” *Journal of the American Academy of Child and Adolescent Psychiatry* 38, no. 11 (November 1999), <http://nps.illiad.oclc.org/illiad/illiad.dll?SessionID=M103915675C&Action=10&Form=75&Value=29933> (accessed May 5, 2008), 1372.

²²⁴ Ibid., 1378.

Project Heartland was the first community health response to a large-scale terrorist event in the U.S. As such, there was no existing template on the appropriate services for terrorist-caused psychological trauma. Project Heartland found that traditional crisis counseling techniques were ineffective.²²⁵ They reached out to provide services to a broad spectrum of minority and ethnic populations, since they often suffer in much greater numbers the effects of mass consequence incidents, whether natural or man-made in nature. The following victims' needs were identified in the postcrisis phase in Oklahoma City.

- Mental health services to ease the transition from the event to “normal” work and family conditions.
- Recognition by employers and supervisors of the traumatic impact on first responders and efforts to provide counseling, debriefing, and other assistance to help them cope.
- The ability to increase and supplement mental health staff in agencies faced with responding to mass casualties.
- Experienced staff aware of the unique needs of terrorism victims. Many individuals whose lives were relatively untroubled and productive before the bombing continue to experience symptoms including nightmares, loss of short-term memory, hallucinations, and a recurrent sense of “going insane.”²²⁶

Still, a number of researchers question the metrics used in disaster research. One of the criticisms of Oklahoma’s Project Heartland is that it is a failure to systematically and contemporaneously evaluate its effectiveness. Therefore, the lessons learned in the process are anecdotal.²²⁷

Four months following 9/11, 18% of New York City youth exhibited “severe” or “very severe” levels of PTSD, and 66% of youth were exhibiting “moderate” symptoms of PTSD.²²⁸ Again, the importance of proximal relation to the incident is evident. Three and nine months following the 9/11 attacks, Koplewicz et al., (2002) compared PTSD

²²⁵ *Responding to Terrorism Victims: Oklahoma City and Beyond*, 8-9.

²²⁶ Ibid., 7, 19.

²²⁷ Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*.

²²⁸ Comer and Kendall, *Terrorism: The Psychological Impact on Youth*, 186.

symptoms of youth that were trapped in the towers versus youth who attended nearby schools but were not at the site of the attack. The PTSD rates were higher for those trapped at the World Trade Center and they exhibited more disaster-related fears unrelated to terrorism than the comparison youth.²²⁹

Six months following the 9/11 attacks, PTSD rates were highest among those directly exposed to the attack. By exposed, they were injured, running from debris or smoke, had a family member who died or escaped from the WTC towers, or had been exposed to trauma prior to 9/11. Interestingly, those who immersed themselves in watching television coverage of the attacks suffered PTSD as well.²³⁰ This was consistently found in residents of Oklahoma City bombing who spent a great deal of time watching television coverage. Most Americans not directly affected by the attacks of 9/11 recovered within six months of the event, but the simple threat of a terrorist attack and the media transmitting this threat may cause children and the community to be terrorized.²³¹

2. Panic

This section will address the reality of panic's likelihood in disasters. If it is not occurring as often portrayed, why is not pre-event awareness being promoted to further limit the likelihood of occurrence? The actions that victims or potential victims take during the event phase will impact the recovery phase. There is a common myth that panic is the most common reaction from people caught up in disasters. For this reason, there are those that believe disaster and hazards information should not be disseminated to the public for fear of causing panic. This paper argues that children can handle age-appropriate information as they have with fire prevention education materials.

²²⁹ Comer and Kendall, *Terrorism: The Psychological Impact on Youth*, 188.

²³⁰ Stovall-McClough and Cloitre, *Traumatic Reactions to Terrorism: The Individual and Collective Experience*, 141.

²³¹ Judith L. Alpert, PhD and others, *Fostering Resilience in Response to Terrorism: For Psychologists Working with Children* (American Psychiatric Association, January 8, 2004), <http://www.apa.org/psychologists/resilience.html> (accessed December 8, 2007), 1.

Furthermore, the following indicates that there is strong evidence in having information (possessing knowledge) prior to a disaster will provide a basis of awareness, and further reduce the possibility of panic.

The Our Lady of the Angels and Collinwood school fires document panic from children “It was utter chaos and panic. It was insane, the breaking glass, the screaming children, and seeing children jumping from windows.”²³² Two important factors in panic figured prominently that day; the delay in a timely response to the existing threat, and the lack of options when trapped or perceived to be trapped.²³³

The idea of panic endures because it allows the blaming of victims of a disaster, which is an easy explanation to a complex situation. Therefore, it deflects attention from the larger contexts of people’s behavior.²³⁴ The reality is that panic rarely occurs and people are more likely to be guided by choice and helping those around them who need it, particularly where informed choices are available during the event. This does not mean that panic will not occur; only that it is rare.²³⁵ Not only is it rare, it is not contagious, and it is of short duration. For panic to occur, three conditions need to exist: (1) a perception of immediate danger (2) apparently blocked escape routes and (3) a feeling by the victim that he is isolated.²³⁶

Movies and the media promote the image of panic where chaos ensues, and a complete disregard for the welfare of others is rampant. It is almost understandable from the media’s standpoint since little drama or newsworthy headlines come from orderly egress from a building, or leadership that calmly takes charge, leading the less vulnerable to safety. The Oxford English Dictionary defines panic as an “excessive feeling of alarm or fear...leading to extravagant or injudicious efforts to secure safety.” The idea of self-

²³² Interview with Michael Mason on July 16, 2008.

²³³ Lee Clarke, “Panic: Myth or Reality?” In *Introduction to Homeland Security. Course Readings*, 0701/0702 Cohort-Spring 2007 ed. (Monterey, CA: Naval Postgraduate School).

²³⁴ Ibid.

²³⁵ Jane Eyre Ph.D., *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response* (United Kingdom: Department for Culture, Media and Sport, October 2006).

²³⁶ Ibid.

interest or selfishness is often incorporated, giving the idea that people will sacrifice others to save themselves. The reason we believe it is wrong to yell “fire” in a crowded theater – even if the theater is on fire – is the assumption that the ensuing panic will cause more deaths than the fire itself.²³⁷

Survival is not just a product of luck and everyone has a “disaster personality” that takes over in a crisis that can refine a personality and teach brains to work quicker and maybe wiser. On the contrary, when disaster strikes, a troubling human response may cause people to freeze up and shut down, suddenly becoming limp and still. This response can inflate the death toll. Humans show an extraordinary capacity to survive in adverse situations. Though there are instances of people permanently scarred from traumatic incidents, the occurrence is rare.²³⁸

History is replete with examples of mass disasters and the reactions of both individuals and groups that either led them to safety, or led to tragedy. The main purpose of a group is to perform some function that the individuals who belong to it cannot, or will not, solve alone. The individuals within the group still have free will and to maintain cooperation they must have greater confidence in the decision-making of the group than from acting alone. The cooperation of groups can be the most effective resource for individual resilience.²³⁹ Instead of panicking, crowds generally become quiet and docile during times of extreme stress contrary to the popular expectation that mass panic will ensue. In fact, panic is rare and the bigger problem is people doing too little, too slowly.²⁴⁰

Many in the general public hold the media’s notion of panic. Victims from the World Trade Center on 9/11 often interpreted the behavior of others or themselves, in terms of panic, when the feelings they were typically describing were feelings of fear and

²³⁷ Clarke, *Panic: Myth or Reality?*

²³⁸ Amanda Ripley, “How to Survive a Disaster,” *Time Magazine*, June 9, 2008, 41.

²³⁹ P. H. Longstaff, *Security, Resilience, and Communication in Unpredictable Environments such as Terrorism, Natural Disasters, and Complex Technology* (Cambridge, MA: Harvard University Program on Information Resources Policy, November 2005), <https://www.hsl.org/homesec/docs/edu/nps36-0830007-02.pdf&code=0cbc7a24f0e4583d31fd8c5387bc3821> (accessed April 16, 2008), 47–48.

²⁴⁰ Ripley, *How to Survive a Disaster*, 42.

not panic-stricken behavior. Five decades of research on how people respond to extreme natural disasters such as floods, earthquakes and tornadoes have concluded that people rarely lose control.²⁴¹

The reaction to the 1995 sarin gas attacks on the Tokyo subway was a predominantly psychological response in a phenomenon known as the “worried well” – individuals who feared they were exposed and contaminated despite evidence to the contrary. Psychosomatic symptoms occurred in some of these unexposed individuals believing they were in danger. Panic was not a common reaction in Tokyo. The hasty evacuation of subway cars and terminals, or rapid flight from the traumatic scene; intense emotions; the desire to assist others in need; fear; or anger are actually rational responses to disaster.²⁴²

Specific incidents that perpetuate the notion of panic include the 1977 fire at the Beverly Hills Supper Club in Southgate, Kentucky that killed 165 people. The reality is that upon the report of fire, people began calmly filing out through the exits. Smoke and flames soon met those attempting to leave the front doors. As the fire grew, survivors reported feeling frightened, and screaming and pushing began. What did not happen was the overpowering or shoving aside of weaker individuals to preserve self-interest. Similar to Our Lady of the Angels, had they realized the danger they were in earlier, fewer would have died.²⁴³ Many were waiting in a crowded hallway as the smoke started to get heavy and lights began to flicker, without a sound. Standing in the dark, the crowd was waiting to be led.²⁴⁴

The general public is not considered capable of handling knowledge and access from high-level decision makers. The justification is that the public cannot handle bad news and will as a result, panic. Research from decades of natural disasters to the events

²⁴¹ Clarke, *Panic: Myth or Reality?*

²⁴² Pang, *After the Attack: The Psychological Consequences of Terrorism*, December 8, 2007, 3.

²⁴³ Ibid.

²⁴⁴ Amanda Ripley, “How to Survive a Disaster,” *Time Magazine*, June 9, 2008, 41, 43.

of 9/11 demonstrates that even under the worst news, people will act civil and cooperate. Leadership charged with information dissemination would be wise to see the public as partners in recovery rather than as a “constituency” to be handled.²⁴⁵

Panic is largely preventable by having an informed public that has the capacity to adapt and cooperate with officials in responding to threats and disasters.²⁴⁶ Social situations have rules that people generally follow. Disaster situations have rules as well and people tend to follow them in a like manner. People die the same way they live, with friends, loved ones, and colleagues. The rule of people helping those around them before they help themselves can be found in social or disaster situations.²⁴⁷

C. COMMUNITY SUPPORT

When considering psychosocial intervention for children, planning, training and response should include those professionals that work with children, such as teachers, counselors, and school resource officers. It should be remembered that children can only comprehend the long-term effects of the disaster at their own level of experience and understanding.²⁴⁸

There is tremendous value in learning about children’s values from the adults in their lives, though research has shown that adults consistently underreport levels of distress and emotional problems.²⁴⁹ Parents are likely to influence how children respond to terrorism, and there are few other types of traumatic events where the potential threat to both parent and child is comparable.

²⁴⁵ Amanda Ripley, “How to Survive a Disaster,” *Time Magazine*, June 9, 2008, 41, 43.

²⁴⁶ Adrienne S. Butler, Allison M. Panzer and Lewis R. Goldfrank, “Developing Strategies for Minimizing the Psychological Consequences of Terrorism through Prevention, Intervention, and Health Promotion,” in *Preparing for the Psychological Consequences of Terrorism. A Public Health Strategy* (National Academy of Sciences, November 19, 2003), 110-111.

²⁴⁷ Clarke, *Panic: Myth or Reality?*

²⁴⁸ Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*.

²⁴⁹ Peek, *Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction*, 10.

When the events of 9/11 unfolded, one New York father frantically packed his car after pulling his three children from school. His plan was to remove his family from the smoke of the city burning and travel to a cabin in North Carolina. His frantic behavior was scaring his family, and more importantly, teaching his children inappropriate ways of dealing with stress. About five days later, the family returned when the world did not end. However, his initial actions caused long-term stresses on the children.²⁵⁰

The needs of children are often underestimated or neglected following disasters. The problem of under reporting is something that mental health and school officials may have to watch for, as parents are wrapped up in the trauma themselves, and largely unaware of the impact on their children. Adults will struggle with their own ability to cope with the event and may be less attentive to their children.²⁵¹ Parents should be encouraged to resume as much of their normal routine as soon as possible.²⁵²

Ofra Ayalon's "circles of vulnerability" model is often used to understand the far-reaching psychological impact of terrorism. Using concentric circles from the center outward, the closer to the event, the stronger the impact (Figure 2). Moving from the center to the outer circles will be those with less physical proximity and less emotional connection to the original attack. Survivors most directly affected are located in the center circle. This includes direct victims of kidnapping taking as hostages who are harmed themselves or witness to the murder of family and friends. The circle outside the center will be represented by loved ones of those killed or injured. Like the images in the aftermath of 9/11 when families were helplessly anxious about the well being of their loved ones, and afterward had to deal with the burden of loss and mourning. The next circle identifies the first responders that were involved in the rescue and recovery. Other

²⁵⁰ Mary Beth Williams, "How Schools Respond to Traumatic Events. Debriefing Interventions and Beyond," in *Mass Trauma and Violence. Helping Families and Children Cope*, ed. Nancy Boyd Webb (New York: The Guilford Press, 2004), 121-122.

²⁵¹ Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*.

²⁵² *Psychosocial Issues for Children and Families in Disasters: A Guide for the Primary Care Physician* (Elk Grove, Illinois: Work Group on Disasters. American Academy of Pediatrics, 2007), http://mentalhealth.samhsa.gov/_scripts/printpage.aspx?FromPage=http%3A//mentalhealth.samhsa.gov/publications/allpubs/SMA95-3022/default.asp (accessed May 3, 2008).

circles will include friends, mental health workers, and other individuals that offer support and the at-large community that may have been specifically targeted (e.g., Americans, Jews, African Americans, etc.).²⁵³

Dr. Scott Poland applied the circles of vulnerability as a psychological tool during his role as a crisis consultant following the school shooting at Red Lake High School in Bemidji, Minnesota.²⁵⁴ The circles are geographic, psychosocial proximity, and the individual's trauma history. Dr. Poland describes the process using the incident as an example. A gunman enters the classroom and kills a boy named Thunder. Within the first circle of vulnerability will be those that saw Thunder killed. The second circle will be Thunder's family members and best friends. The third circle will contain those in the community that may have lost someone close to violence, or they may have a family member dying from cancer. These circles can overlap and follow up is required, especially the individual that is placed in two to three circles.²⁵⁵



Figure 1. Circles of Vulnerability following Terrorism

²⁵³ Stovall-McClough and Cloitre, *Traumatic Reactions to Terrorism: The Individual and Collective Experience*, 122-123.

²⁵⁴ A high school senior went on a shooting rampage on an Indian reservation, killing his grandparents at their home, and then seven people at his school, before killing himself.

²⁵⁵ Dr. Scott Poland is a nationally recognized expert on school crisis, youth violence and suicide intervention. He has made numerous television news appearances. He was contacted for an interview on July 28, 2008 at his office at Nova Southeastern University in Ft. Lauderdale, Florida.

Community support comes from those furthest away from the affected to the inner circles surrounding the event. The outer community circle may be the nation that rallied around the victims of 9/11 or Columbine. Community may be the neighborhoods surrounding the Amish schoolhouse in Pennsylvania, and community may be family, friends, schools, churches, and help groups. It is important to recognize that while individual victims are affected, disasters do not happen to individuals, per se. Rather, they represent collective stress situations occurring at a community level as a result of major unwanted consequences. Thus, the disaster, the recovery, and the rebuilding process may be considered a social and communal phenomenon.²⁵⁶

“One of the problems is that most schools do not want to think about disaster or recovery as a long-term process. Addressing long-term recovery means that an event will go beyond a couple of days, which goes beyond the inclination of school administrators. Following traumatic events, evaluation may be needed week or months later. Triggering events may be anniversaries, memorials, or maybe the birthday that Thunder would have had.” For most trauma survivors, posttraumatic growth and distress will coexist, and the growth emerges from the struggle with coping, not from the trauma itself.²⁵⁷

D. CHAPTER SUMMARY

The research into the effects of terrorism in the U.S. is in its infancy and comprehensive literature on America’s psychological experience with terror is scarce. Due to the infrequency of attacks, the U.S. government, including its education system, has a fractured approach in dealing with the recovery process, if it has an approach at all.

After action reports and case studies from school violence incidents such as Virginia Tech and Columbine may suffice as a corroborating link to the terror experience that others have experienced abroad. Incidents such as Oklahoma City, 9/11, Hurricane Katrina, and the SARS outbreak, provide studies that address the psychological impact on children. In the big picture of enabling and expediting school recovery, the psychological

²⁵⁶ Hutton, *Psychosocial Aspects of Disaster Recovery: Integrating Communities into Disaster Planning and Policy Making*, 1-9.

²⁵⁷ Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*, 38.

impact of terrorism needs to be considered vis-à-vis other aspects of school violence. If so, are American schools, and the public in general, addressing the issue and will children get the care needed to enable recovery?

The best way to protect against PTSD would be to prevent future terror attacks. Since such a strategy is unlikely to occur, the next best approach is to promote resilience at the societal level. This would require implementing laws, policies, and practices to ensure optimal preparation for the public in response to terrorist attacks. When brought down to the individual level, psychological resilience should be promoted as part of an overall public health strategy.²⁵⁸

Those that have been directly involved in disasters highlight the importance of exercising caution to those that apply a simplistic time-lined approach to recovery and understanding the reactions of individuals. People will not return to the same pre-event life and will have to adapt to finding a “new normal” as part of recovery.²⁵⁹

In the aftermath of the Amish schoolhouse shooting, mental health professionals provided counseling for several weeks thereafter, serving anyone in need, including panic-stricken Amish children. According to an Amish fire official, “They told us things will never be the same again, that we must find a ‘new normal.’”²⁶⁰ Following the Beslan siege, some caregivers refused to be overwhelmed by revenge or helplessness, and instead focused on the return to normal life.²⁶¹ New York school officials were faced with the challenge of how and how soon to return to normalcy. They never deviated from the objective of sustained well being for the students.²⁶²

²⁵⁸ Matthew J. Friedman, “Toward a Public Health Approach for Survivors of Terrorism,” in *The Trauma of Terrorism*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 530.

²⁵⁹ Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*, 29.

²⁶⁰ Kraybill, Nolt and Weaver-Zercher, 30.

²⁶¹ Moscardino and others, *Narratives from Caregivers of Children Surviving the Terrorist Attack in Beslan: Issues of Health, Culture, and Resilience*, 1783.

²⁶² Markenson, Degnan and Thomas, *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*, 21-50.

The new normal requires a new level of vigilance and responsibility. Schools have the same responsibility in preparing for unsuspecting threats and prolonged uncertainty as household and communities do. The preparations will not only serve school communities in times of crisis, but also during times of stability.²⁶³ One of the lessons from 9/11/01 is that resilience is the usual response to terrorism and the general rule of human adaptation. It is time for the new normal to include psychological resilience to empower children and strengthen the resolve of schools they attend.

²⁶³ *Safeguarding Schools against Terror*, 1.

VI. RESILIENCE AS A METHOD TO ALLEVIATE IMPACTS

The events of 9/11 raised awareness on how to better protect the nation and individuals. The attacks momentarily erased the apathy that entrenches many school districts and society in general. Seven years removed from 9/11/01, the “it can’t happen here” mantra is alive and well in the U.S., even amongst educators. This is a dangerous attitude since schools are charged with protecting 53 million young people for a considerable part of most days in more than 119,000 public and private schools. Another 6 million adults work as teachers or staff. Counting students and staff, on any given weekday more than one-fifth of the U.S. population can be found in schools.²⁶⁴

The type of resilience being promoted should be clear as the types of resilience vary. Business may define resilience as maintaining continuity of operations after a disaster’s affects. In this context, resilience will be examined from a psychological or psychosocial perspective. This chapter will take the lessons learned from previous school disasters that have left significant psychological impacts on school faculty, students, their families, and communities. Promoting resilience will not be a substitute for natural reactions during mass casualty incidents. It has, however, been proven to strengthen resolve, and improve psychological recovery.

Though reduced from the stress of intentional targeting, natural disasters can also adversely affect a child as well as the community’s sense of protection and well-being. Fires, tornadoes, hurricanes and flooding have impacted American schools much longer than terrorism and shootings. The Our Lady of the Angels school fire tragedy is one of the earliest school settings that stressed the important aspect of promoting resilience, preparedness, and the response to possible fires. Since the fire, students across the country recognize the fire alarm and know how to react in the event of a fire. Fire drills are standard in all school settings and preparedness reduces the potential for chaos or harm to students should a fire occur. Society is still learning and attempting to apply the lessons of resilience from other natural disasters, primarily from Hurricane Katrina.

²⁶⁴ Trump, *Protecting our Schools: Federal Efforts to Strengthen Community Preparedness and Response*.

A. WHAT IS RESILIENCE?

The lessons are available to strengthen psychological resilience, which is the characteristic that allows one to resume functioning with minimal disruption. The empirical study of psychological resilience originated in the early 1980s to study children at risk of poor outcomes due to genetic or environmental circumstances.²⁶⁵ It was initially described as “stress resistance” for children at risk for poor outcomes due to genetic or environmental circumstances. The unexpected observation of positive development among high-risk children gave rise to the study of resilience.²⁶⁶

Resilience is a positive trait that can be difficult to define. It is known to be desired, but if asked, the definitions would likely be wide-ranging. Many social psychologists have tackled the concept of resilience and their opinions vary on the definition.

Resilience is facing a threat in a way that builds confidence in the individual’s ability to master future threats. It cannot grow from someone else and personal responsibility is required for the successful response to a threat.²⁶⁷

Resiliency is an interactive product of beliefs, attitudes, approaches, behaviors, and perhaps physiology that help children and adolescents fare better during adversity and recover more quickly following it. Resilient children bend rather than break during stressful conditions, and they return to their previous level of psychological and social functioning following misfortune.²⁶⁸

²⁶⁵ Michael T. Kindt, *Building Population Resilience to Terror Attacks: Unlearned Lessons from Military and Civilian Experience* (Maxwell Air Force Base, AL: USAF Counterproliferation Center, November 2006), <https://www.hSDL.org/homesec/docs/dod/nps30-052307-01.pdf&code=08c874b96381deee8a1f0f2aed8defd1> (accessed March 20, 2008), 5.

²⁶⁶ Adrienne S. Butler, Allison M. Panzer and Lewis R. Goldfrank, “Developing Strategies for Minimizing the Psychological Consequences of Terrorism through Prevention, Intervention, and Health Promotion,” in *Preparing for the Psychological Consequences of Terrorism. A Public Health Strategy*, National Academy of Sciences, November 19, 2003, 99-134 (accessed May 26, 2008), 401.

²⁶⁷ Michael T. Kindt, *Building Population Resilience to Terror Attacks: Unlearned Lessons from Military and Civilian Experience* (Maxwell Air Force Base, AL: USAF Counterproliferation Center,[November 2006]), <https://www.hSDL.org/homesec/docs/dod/nps30-052307-01.pdf&code=08c874b96381deee8a1f0f2aed8defd1> (accessed March 20, 2008), 5.

²⁶⁸ Judith L. Alpert, PhD and others, *Fostering Resilience in Response to Terrorism: For Psychologists Working with Children*, 1.

Just as understanding the meaning of forgiveness is important when judging the Amish reaction to their tragedy at West Nickel Mines; so is understanding what resilience is and is not. Resilience does not mean forgiveness or getting over the incident and moving on; especially when discussing the intentional harming of children. Rather, it means that though difficult and upsetting, hardships are not insurmountable.²⁶⁹

The term “resilient” was adopted to differentiate from the earlier terms such as invulnerable, invincible, and hardy because of the recognition of the struggle involved in the process of becoming resilient. Resilience refers to those factors and processes that limit negative behaviors associated with stress and result in adaptive outcomes even in the presence of adversity.²⁷⁰

A widely used definition of educational resilience is “the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences” (Wang, Haertel, & Walberg, 1994). While success is a variable that is often measured through cognitive, affective, and behavioral outcomes, adversity is a phenomenon that educators usually avoid defining and study though its impact affects success. Adverse conditions may include attending an at-risk school environment, poverty, drug abuse, sexual activity, coming from a single-parent home, or being home alone after school three or more hours a day. If multiple risk factors exist, can an otherwise successful student be considered resilient? Educationally-resilient students with one or two risk factors will be different from students with extremely high-risk behaviors (e.g., substance abuse, attempted suicide).²⁷¹

Sometimes referred to “bouncing back” like a spring to pre-trauma or pre-crisis behavior, resilience focuses on assets and resources that serve a protective purpose in adverse conditions. Psychological resilience is increased by breaking down a crisis into

²⁶⁹ Alpert, PhD and others, *Fostering Resilience in Response to Terrorism: For Psychologists Working with Children*, 1.

²⁷⁰ Hersh C. Waxman, Jon P. Gray and Yolanda N. Padron, *Review of Research on Educational Resilience* (Washington, D.C.: Center for Research on Education, Diversity & Excellence, 2003) <http://www.cal.org/crede/pubs/research/RR11.pdf> (accessed August 14, 2008), 2.

²⁷¹ Ibid., 2.

manageable pieces and not as too large to be managed. By providing pre-attack information and the small steps that the population can take to greatly improve their security from attacks, authorities can greatly enhance resilience.²⁷²

Stress is a normal reaction to disaster. In the majority of cases, people bounce back, and in fact, psychological resilience is probably the most common observation after all disasters. Disasters have been found to bring communities together in an altruistic manner that helps victims cope and learn about their own strengths, save or comfort others, and change the way they view the future.²⁷³

Disasters will still occur and lives may be lost but communities can be better prepared by empowering children that will have a ripple effect throughout the community. One's experience with disaster and their ability to cope is an important consideration in building resilience. A key to the development of resilience is having had the experience of facing a threat and successfully managing the crisis. The population will likely be helped by having concrete information on what to expect and what to do to prepare for a terrorism event.²⁷⁴

Most studies of resilience emerge from countries outside the U.S. Israel and the United Kingdom (UK) have led the world in the study of resilience. Their research focuses on the impact of terrorism on specific populations, including children and an emphasis on societal resilience. Countries that have greater experience with terrorism serve as models that may be applicable in the U.S. Specific criteria including U.S. history of resilience, models or education programs, the resilience of children, the role of government, and finally, organizational resilience, which includes schools, will be analyzed; primarily from Israel and the UK with a correlation to America's approach.

²⁷² Kindt, *Building Population Resilience to Terror Attacks: Unlearned Lessons from Military and Civilian Experience*, 8.

²⁷³ *Effects of Traumatic Stress after Mass Violence, Terror or Disaster*, 1-2.

²⁷⁴ Butler, Panzer and Goldfrank, *Developing Strategies for Minimizing the Psychological Consequences of Terrorism through Prevention, Intervention, and Health Promotion*, 108-109.

B. U.S. RESILIENCE COMPARED TO ISRAEL AND THE UNITED KINGDOM (UK)

America's response to 9/11 was dramatic as the nation grounded all air traffic for three days, increased security, escalated the list of targets considered to be at-risk, and travel, particularly by air, plummeted. Contrast with the July 2005 terrorist attack in the United Kingdom after a coordinated attack on London's mass transit system that killed 58 and injured hundreds more. In spite of the attacks, London's mass transit system resumed some routes the same afternoon and all were resumed after repair.²⁷⁵ Clearly, the British population was more resilient after a traumatic event than the American population. The question is why.

It is not possible to determine the quick return to normalcy of the British, but an understanding of resilience suggests that trauma is increased by a number of psychological factors. This includes the population's preparation for the trauma, their perceived ability to cope with trauma, and perhaps most important, experience of successful recovery to past trauma.²⁷⁶ Beginning with civilians being targeted by German bombers during WWII and continuing through attacks by the Irish Republican Army over the past few decades, the British experience with traumatic attacks is greater than the U.S. and they have had to learn to live with terror to a much greater extent.²⁷⁷

A peculiar trend was discovered in the UK by social psychologists where the human tendency is to recover better and faster to major trauma than minor trauma. After a bomb killed 11 people and injured 60 others in Enniskillen, Northern Ireland, the residents exhibited greater coping behaviors than residents of communities under less attack. The residents of Enniskillen accurately recalled the violent event and actively sought social support, often through church attendance and their religiosity.²⁷⁸ In another

²⁷⁵ Kindt, *Building Population Resilience to Terror Attacks: Unlearned Lessons from Military and Civilian Experience*, 1.

²⁷⁶ Ibid., 2.

²⁷⁷ Ibid.

²⁷⁸ Susan E. Brandon and Andrew P. Silke, "Near- and Long-Term Psychological Effects of Exposure to Terrorist Attacks," in *Psychology of Terrorism*, eds. Bruce Bongar and others (New York: Oxford University Press, 2007), 180.

study, children on the Isle of Wight, Rutter (1979) determined that in the wake of attacks, the school environment could foster a sense of achievement in children, enhancing their personal growth, and increasing their social contacts.²⁷⁹

Similar to the reaction after the UK train bombings, Israeli police officials believe that citizens, businesses, governmental agencies and other impacted groups need to return to daily routines as quickly as possible after an attack. They stress that the longer the delay in returning to normalcy, the greater the impact of the attack.²⁸⁰ Israel does not have the external strength of the U.S. However, they do have a great deal more experience with terrorism and school attacks and a natural built-in resiliency that comes from that experience.

Since its establishment in 1948, Israel has been through five major wars. According to Danny Brom, the director of the Israel Center for the Treatment of Psychotrauma, “as to terrorism we are not talking about PTSD; we are talking about an attack on the fabric of society...We have to develop resiliency-building services...We will become a stronger society as the result of attempts to weaken us.”²⁸¹ Resiliency is the cornerstone and overarching theme of Israel’s efforts. Resiliency – in the form of equipped, educated, and psychologically prepared community – is the only way to confront terrorism.²⁸²

²⁷⁹ Hersh C. Waxman, Jon P. Gray and Yolanda N. Padron, *Review of Research on Educational Resilience* (Washington, DC: Center for Research on Education, Diversity & Excellence, 2003), <http://www.cal.org/crede/pubs/research/RR11.pdf> (accessed August 14, 2008), 3.

²⁸⁰ Michael Dorn and Chris Dorn, *Innocent Targets - when Terrorism Comes to Town*. Safe Havens International, 2005, 68.

²⁸¹ Bongar, *The Psychology of Terrorism. Defining the Need and Describing the Goals*, 9.

²⁸² Annemarie Conroy, “What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?” (M.A., Naval Postgraduate School), www.chds.us (accessed August 18, 2008), 92.

The Israeli government provides realistic information to the public on terrorism. On the Home Front Command website, they encourage the proper behavior depending on the threat. Examples include, “How to behave in …” terrorist attacks, fires, earthquakes, and the updated, “How to Behave in a Rockets or Mortar Attack,” with the tag line, “Correct behavior in the face of daily threats saves lives!”²⁸³

So what about American resilience? America’s founding is rooted in extraordinary challenges from wars to economic struggles, and natural disasters, so resilience is not a foreign concept to the U.S.²⁸⁴ From teaching fire prevention in the late 1950s and hiding under desks from nuclear attacks during the height of the Cold War in the 1960s, Americans have evolved to lockdown drills in the last decade to better prepare children, and in turn, the community. Still, something seems to be missing in preparing U.S. communities to be resilient. Instead of self-awareness and focusing on strengths including resilience, the tendency is to look for someone to blame as seen with practically every mass casualty incident over the last decade (e.g., law enforcement at Columbine and VTU, school officials at Beslan, and the government on 9/11 and Katrina). Blaming others does not empower and does not coincide with resilient behavior. Resilience promotes the responsibility of self and not necessarily reliance on others to provide protection.

C. RESILIENCE IN SCHOOLS

Israeli academia has looked at youth and school violence for more than 30 years. Still, many in Israel did not believe school violence was a serious issue until the late 1990s.²⁸⁵ Early studies did not give more than cursory attention to the role of schools. Ofra Ayalon’s “Rescue,” a guidebook for schools was the only instruction manual that

²⁸³ “How to Behave in a Rockets or Mortar Attack,” http://www.oref.org.il/315-en/PAKAR.aspx#paragraph_3 (accessed July 15, 2008).

²⁸⁴ Flynn, *America the Resilient. Defying Terrorism and Mitigating Natural Disasters*.

²⁸⁵ Rami Benbenishty, Ron Avi Astor and Roxana Marachi, “A National Study of School Violence in Israel: Implications for Theory, Practice and Policy,” in *Handbook of School Violence and School Safety: From Research to Practice*, eds. Shane Jimerson and Michael Furlong (New Jersey: Lawrence Erlbaum Associates, 2006), 483.

existed in Israel in 1979, and contained little more than training teachers and students to run to shelters. The focus in the late 1970s was to help individuals and communities cope with emerging violence in Northern Israel border towns.²⁸⁶

Preparedness is a way of life in Israel and considered a shared responsibility between the citizenry and the government. Every day, Israelis consider the threat of terrorism. Resiliency in the face of terrorist acts has been a hallmark of the Israeli approach. As a result, a prepared citizenry is needed from a young age and preparedness education is a core part of the school curriculum in all primary schools.²⁸⁷

Two Israeli projects highlight their resilience, the National School Intervention Project (NSIP) and the Building Resilience project. The impetus behind Israel's National School Intervention Project (NSIP) was the largely unrecognized attention to long-term stress and exposure to terrorism. NSIP was developed over growing concerns with the security situation and the impact on the Israeli population. It was designed for the entire school population and framed around resilience and wellness, instead of the typical focus of pathology, risk, and treatment.²⁸⁸

The field of psychological resilience is still in its early childhood, but there is a general consensus that factors include self-esteem, coping strategies, social support, hope and meaning, optimism, and humor. In Israel, the *Building Resilience* project selected teachers as the focus of the program since they are in daily contact with children and can, therefore, provide the most direct and ongoing support to children experiencing high levels of stress and exposure to trauma. The purpose of the project was to provide

²⁸⁶ M. Lahad and A. Cohen, "The Community Stress Prevention Center - 18 Years of Community Stress Prevention & Intervention," *Community Stress Prevention* 3 (1998), [http://www.icspc.org/_Uploads/dbsAttachedFiles/CSP3\(1\).pdf](http://www.icspc.org/_Uploads/dbsAttachedFiles/CSP3(1).pdf) (accessed July 19, 2008), 1-9.

²⁸⁷ Conroy, *What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?*, 81.

²⁸⁸ Naomi L. Baum, "Building Resilience: A School-Based Intervention for Children Exposed to Ongoing Trauma and Stress," in *The Trauma of Terrorism. Sharing Knowledge and Shared Care. An International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 489.

teachers with skills and knowledge in the areas of resilience, stress, and exposure to trauma, to assist them in their interaction with children, dealing with issues such as fear, loss, and dealing with trauma, through improved self-confidence.²⁸⁹

One of the strategies for protecting the civilian population during times of emergency is to utilize high school students to assist the IDF Home Front Command Medical Corps by assisting in the distribution of medications and rendering assistance to the population in shelters and assist in the hospitals.²⁹⁰ This attitude is not as ingrained into the American teenager's mind as it is in Israel. Part of the reason may be that Israeli students know upon completion of high school that they will be joining the military.

Schools in Israel and the UK have endured attacks through war and terrorism from which the U.S. can learn. Educators are an influential group that could adopt the term *resilience* like their counterparts in the UK. However, they must be given the proper tools to empower children. Both Israel and the UK have dedicated:

- A commitment to citizen preparedness
- Promoting resiliency in the formative years of childhood.
- Keeping safety messages clear and simple.
- Better understanding the psychology of terrorism
- Improving government trust.²⁹¹

Israel has gone a few steps further towards resilience. Along with the aforementioned, the U.S. could possibly apply the following lessons from Israel though some may be cost prohibitive:

²⁸⁹ Naomi L. Baum, "Building Resilience: A School-Based Intervention for Children Exposed to Ongoing Trauma and Stress," in *The Trauma of Terrorism. Sharing Knowledge and Shared Care: An International Handbook*, eds. Yael Danieli, Danny Brom and Joe Sills (New York: The Haworth Press, 2005), 493-494.

²⁹⁰ Consuelia Pockett, *United States and Israeli Homeland Security: A Comparative Analysis of Emergency Preparedness Efforts*. (USAF Counterproliferation Center, Air University, Maxwell Air Force Base, Alabama: The Counterproliferation Papers Future Warfare Series No. 33, August 2005), <http://www.au.af.mil/au/awc/awcgate/cpc-pubs/pockett.pdf> (accessed February 25, 2008).

²⁹¹ Conroy, *What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?*, 12-112.

- Interagency cooperation – Israel includes schools in the planning process, exercise simulations and critiques of realistic drills and scenarios with all agencies that will be involved.
- Public Education – A major education campaign complete with the distribution of necessary literature and safety/medical equipment to citizens.
- The use of advanced technology such as sensors and surveillance cameras.
- The use of barriers and fences to provide security and buffer zones.
- The National Police Force School Security Unit concept.²⁹²

In the U.S., the 1984 Project Competence study by Garmezy, Masten, & Tellegen, sought to better understand how resiliency influences elementary aged students from third to sixth grade under stressful situations. Two hundred children and their families participated over a 10-year period. Researchers discovered that disadvantaged children with lower IQs, socioeconomic status, and diminished family relationships were more likely to be disruptive and less competent. However, some of the disadvantaged children were competent and displayed no behavioral problems, which prompted the question, why some children did not succumb to the adversity they faced and develop negative adaptations.²⁹³

Millions of parents send their children to school daily with the relative comfort that schools are a sanctuary from the outside world of violence, terrorism, and other threats. This perceived comfort is rational since most schools operate daily without consequential incidents that leave a lasting impact on the school community. A predictor of vulnerability to the effects of mass casualties and hazards is youth and family status. Such predictors make schools the ideal choice to incorporate all hazards education that will also provide the link to the home and create the greatest impact on the community, both immediate and long-term.²⁹⁴

²⁹² Gjelsten, *Homeland Security Planning for Urban Area Schools*, 83-84.

²⁹³ Waxman, Gray and Padron, *Review of Research on Educational Resilience*, 3-4.

²⁹⁴ Ronan and Johnston, *Promoting Community Resilience in Disasters. The Role for Schools, Youth, and Families*, 49.

Schools operate on a tight schedule with local, state and federal requirements that must be met during a school year. Coupled with greater scrutiny, the higher potential for lawsuits and doing more with less, public schools struggle to add yet another component to their curriculum. Homeland security is not high on the requirements list for many schools and many school officials believe that disasters happen to other schools and not their own. Consider that school districts often place a heavy reliance on federal and state initiatives rather than local emergency plan development and emergency plans run the gamut from comprehensive to non-existent. A report from the Government Accountability Office (GAO) on school planning and preparedness identifies gaps in schools meeting the Homeland Security strategies. Among the findings were that 32 states have laws or other policies requiring school districts or schools to have emergency management plans, though Congress has not enacted any broad applicable laws requiring school districts to have emergency management plans. Also, a survey sampling public school districts found an estimated 56% of all school districts have not employed any procedures in their plans for continuing student education in the event of an extended school closure, such as might occur during a pandemic, and many do not include procedures for special needs students.²⁹⁵

Conceptual and empirical research over the last few decades has examined why some students are successful in school while others are not, though they come from the same socioeconomic disadvantaged backgrounds. The focus of resilience is not as a fixed attribute but something that can be altered and positively impact an individual's success in school.²⁹⁶

Due to the group dynamics, the social networks, and the amount of time spent there, schools fit the model of being able to support students in the coping process. Community residents look to school personnel for advice on their child's development,

²⁹⁵ Status of School Districts' Planning and Preparedness GAO-07-821T Cong., Congress #110 sess., 2007, <http://searching.gao.gov/cs.html?charset=iso-8859-1&url=http%> (accessed July 20, 2007), 1.

²⁹⁶ Waxman, Gray and Padron, *Review of Research on Educational Resilience*, 1.

learning, behavior and planning for his or her future. Children see teachers as role models and mentors. This responsibility makes the school leaders an important component in community efforts to build resilience in children and families.²⁹⁷

Resilience integration for students and school officials may provide emerging leadership during a crisis. Just because promoting resilience has validity, does not mean it will be promoted in schools that have numerous state and federal academic requirements to meet. Hurdles include the limited resources available to schools; limited communication between school personnel and parents after a disaster; administrators not understanding helpful disaster-related services; and the decrease in family involvement as children enter higher school grades, though continued participation from family is important to building resilience.²⁹⁸

D. RESILIENCE IN CHILDREN

Using a resiliency framework, psychologists have observed repeatedly that children and adults exposed to critical incidents will survive emotionally. In the late 1970s, the resiliency concept was rather new. Despite the constant threat and disruption of routine, the damage and the casualties, the major phenomena was that children demonstrated coping, surviving and managing life. Surveys have revealed that only 5-10% of the population manifest acute stress reaction following an incident. What causes the majority of the population to manage and continue their lives productively? The answers are quite simple. One, people are stronger than expected, and when lives are temporarily disrupted, peoples' responses are simply normal reactions to abnormal situations.²⁹⁹

Case studies reveal that resilience does exist in the U.S. and in its schools. A look at the Amish is not typical Americana, but the manner in which they cope with trauma is

²⁹⁷ "Building Community Resilience for Children and Families," (2006), 55, http://www.nctsnet.org/nctsn_assets/pdfs/edu_materials/BuildingCommunity_FINAL_02-12-07.pdf, (accessed December 8, 2007).

²⁹⁸ Ibid., 56.

²⁹⁹ Lahad and Cohen, *The Community Stress Prevention Center - 18 Years of Community Stress Prevention & Intervention*, 1.

inimitable. The Amish are a close-knit community woven together by family, faith, and culture who believe that the community should come first, not the individual. Whether the tragedy is fire, flood, illness, or death, the Amish respond by surrounding the distressed family with care. They consider this thick web of support *mutual aid*. “The Amish grapevine is faster than the Internet,” said one Amish man, who has never sent an email.³⁰⁰ The Amish acceptance of community serves as a model that can lead to resilience after traumatic events and aid in healing.

Examples of resilience and altruism in children were evident in case studies. In the small Amish schoolhouse, Roberts tied the feet and legs of the remaining schoolgirls telling them, “I’m angry at God and I need to punish some Christian girls to get even with Him.” After calling 911 and ordering law enforcement to leave the school area, he told the girls, “I’m going to make you pay for my daughter.” One of the two thirteen-year old girls, Marian knew his plan was to kill them and assumed a leadership role to protect the younger girls. Telling Roberts, “Shoot me first,” Marian hoped to save the others and fulfill her duty to watch over the little ones in her care. Marian was one of three pronounced dead at the school.³⁰¹

Jacob Ryker was struck by a bullet from a .22-caliber semiautomatic rifle that pierced his right lung, sending him tumbling backward over a cafeteria bench at Thurston High School on his 17th birthday. Injured and seeing his girlfriend shot, Jacob untangled his foot from the bench and charged 10 to 15 feet toward Kinkel who was reloading. Jacob knocked Kinkel to the floor, subduing him. Jacob told his mother, ‘He had been shooting people, and I wasn’t going to let him shoot again.’ “This was perfectly consistent with his character, thinking about other people instead of himself,” said Gary Bowden, who coaches wrestling and teaches social studies. “He was angry that his girlfriend got shot. It was just like Jake to go after him. He wouldn’t have been afraid.”³⁰²

³⁰⁰ Kraybill, Nolt and Weaver-Zercher, *Amish Grace. How Forgiveness Transcended Tragedy*, 30.

³⁰¹ Pockett, *United States and Israeli Homeland Security: A Comparative Analysis of Emergency Preparedness Effort*, 26.

³⁰² Jere Longman, “Shootings in a Schoolhouse: The Hero; Wounded Teenager is Called a Hero,” *New York Times* (May 23, 1998)
<http://query.nytimes.com/gst/fullpage.html?res=9A04E4DA1E39F930A15756C0A96E958260> (accessed June 16, 2008).

An adolescent during the terrorist siege in Beslan volunteered to stand in front of the window to protect the terrorists. At the time, he was thinking that he had already seen a lot of things in life, so he wanted his little brother to live some more, because he still needed to see lots of things.³⁰³

The biggest question is why? What causes certain children to exhibit significant courage to fight and accept fate, instead of running from danger? Numerous factors may be involved including a person's faith, their family upbringing, or their previous experience in dealing with stress or trauma. The manner in which children adapt to adversity includes the way youngsters view and engage the world, the availability and quality of social resources and support, and the presence of specific coping strategies.³⁰⁴

Two studies identified several factors can influence a child's resilience. Benard noted in 1993 that resilience is typically displayed by four characteristics: (1) social competence, (2) problem-solving skills, (3) autonomy and (4) a sense of purpose.³⁰⁵ In 1994, four other related factors were cited by McMillan and Reed including: (1) personal attributes such as motivation and goal orientation, (2) positive use of time including on-task behavior, homework completion, and participation in extracurricular activities, (3) family life (e.g., family support and expectations), and (4) school and classroom learning environment (i.e., facilities, exposure to technology, leadership, and overall climate).³⁰⁶

Flynn lists four factors to sustaining resilience.

1. Robustness. The ability to keep operating in the face of disaster. Built-in redundancy or substitutable systems that can be utilized if something breaks or stops working.
2. Resourcefulness. Skillfully managing a disaster once it unfolds. What are the options, what should be done to mitigate the problem, and communicating who is going to implement the procedure? Resourcefulness is a product of people, not technology.

³⁰³ Moscardino and others, *Narratives from Caregivers of Children Surviving the Terrorist Attack in Beslan: Issues of Health, Culture, and Resilience*, 1783.

³⁰⁴ Alpert, Judith L. PhD and others, *Fostering Resilience in Response to Terrorism: For Psychologists Working with Children*, 1.

³⁰⁵ Waxman, Gray and Padron, *Review of Research on Educational Resilience*, 1.

³⁰⁶ Ibid., 1.

3. Rapid Recovery. Getting back to normal as quick as possible following a disaster. This includes prepared operations and contingency plans, and engaging citizens, i.e., Community Emergency Response Training (CERT) as auxiliary first responders, and utilizing non-governmental vendors as resources and expertise.
4. Absorbing Lessons Learned. Once the disaster has been resolved, it is foolish to repeat the same mistakes that worsened the disaster in the first place. This includes recognizing communication failures and resolving to correct them, and taking financial responsibility for living in a floodplain and deciding to repeatedly rebuild in the same location with the same result.³⁰⁷

Just because children are more vulnerable does not mean they are inherently not resilient. However, children need order when their lives have been disrupted. By promoting resilience, their vulnerability can be reduced by improving their access to resources and information, empowering them through increased participation in disaster preparedness and response activities, offering personal and community support, and providing proper treatment in recovery.³⁰⁸

When promoting community resilience, the vulnerability of children and their resilience capability is a critical component of preparedness and recovery. During the London Blitz, London youth were evacuated to the countryside to escape German bombers. It was discovered that the prolonged family disruption was causing a greater negative impact on the children than the direct impact of violence or destruction.³⁰⁹ After direct exposure to political attacks from 1974 to 1980, psychologists observed psychological difficulties in youths. They noted the symptoms of avoidance and hypervigilance, which would soon be termed PTSD.³¹⁰

³⁰⁷ Flynn, *America the Resilient. Defying Terrorism and Mitigating Natural Disasters*, 6-7.

³⁰⁸ Lori Peek, “Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction,” *Children, Youth and Environments* 18, no. 1 (2008), 20 www.colorado.edu/journals/cye (accessed April 25, 2008).

³⁰⁹ Comer and Kendall, *Terrorism: The Psychological Impact on Youth*, 185.

³¹⁰ Ibid.

The *BASIC Ph* model was developed in Israel to promote coping strategies in Israel and elsewhere. Using multiple modalities to explain mental resilience in stressful situations, *BASIC Ph* examines six fundamental characteristics that are at the core of an individual's coping style.

- Beliefs and values that allow coping through self-reliance and clear values, views, and beliefs.
- Affect and emotion when a person copes by expressing affect of all types.
- Social coping by seeking support in friendships, social settings, and organizations.
- Imagination strengthens coping through imaginary playmates or situations.
- Cognition and thought where coping is enabled by their own knowledge, thoughts and common sense.
- Physiology and activities allows coping by engaging in physical activities and resources.

The *BASIC Ph* model has been used in response to a variety of incidents that include Tel Aviv during the Gulf War and various military operations. To study the coping styles of children, the model was used in two different incidents. First, during school evacuations in Kiryat Shmona and next, involving junior high students in Afula exposed to a suicide car bombing. Three girls and four adults were killed, and eight classmates were injured. The results of the *BASIC Ph* model demonstrated its usefulness in working with children to assist them use their natural coping style and expanding their coping mechanisms to help reduce tension and prevent posttraumatic stress.³¹¹

E. GOVERNMENT TRUST

Preparedness is a partnership.³¹² Most people pay closer attention to the opinions of family and friends than to distant sources such as the media and government officials. The individual's specific circumstances are more likely to play into their decisions than

³¹¹ Lahad and Cohen, *The Community Stress Prevention Center - 18 Years of Community Stress Prevention & Intervention*, 2-3.

³¹² Conroy, *What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?*, 92.

dangers communicated from large-scale sources.³¹³ One of the obstacles facing the U.S. that is not as prevalent in the UK and practically nonexistent in Israel is the lack of credibility and government trust. The trust in its government to manage disasters plummeted in the aftermath of the Hurricane Katrina response.

Conversely, Israeli citizens place a great deal of trust in their government; specifically, the Home Front Command (HFC). U.S. citizens are not inclined to heed homeland security threat warnings, and other alerts that often appear frivolous, such as the use of duct tape and plastic.³¹⁴ Therefore, resilience strategies will more likely be successful through local communication and a heavy reliance on what is working for people nearby rather than on messages about what a distant government assures the public is the right thing to do.³¹⁵ The majority of the U.S. public believes that terrorism will occur within the country, but not to them. The message communicated to the public needs to be credible.³¹⁶

As in the UK, local law enforcement is critical to school protection and are more engaged with schools than their U.S. counterparts. Israeli police determine the school's policy and guidelines and each police station has an officer in charge of school security. If an incident occurs, the police have full and complete control. They and other first responders maintain possession of each school's security plan that is supervised by the Ministry of Education.³¹⁷

Israeli anti-terror protection programs reduce other school related crimes including drugs, violence, vandalism and theft. School protection plans incorporate all local law enforcement and emergency agencies including the municipality, bomb disposal units, fire department, ambulance services, hospitals and the PTA. School

³¹³ Ripley, *How to Survive a Disaster*, 41-45.

³¹⁴ Conroy, *What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?*, 12-112.

³¹⁵ Longstaff, *Security, Resilience, and Communication in Unpredictable Environments such as Terrorism, Natural Disasters, and Complex Technology*, 55.

³¹⁶ Ibid., 81-86.

³¹⁷ “The Israeli Experience in Homeland Security, Special Seminar on School Security, Tools for Tolerance Program Law Enforcement Partnership with Schools” (Los Angeles, October 16-17, 2007).

security provides a complex response to all fields relating to human life and property and that security assists in protecting academic freedom and free spirits. The security response requires an evaluation of threats, environment, population, installation, combined forces and a list of priorities.³¹⁸

Public places, including schools have guards posted at their entrances to check visitors' bags.³¹⁹ Conroy aptly provides anecdotal stories from Israeli citizens that highlight their resilience in light of constant terror threats. "In the U.S., bags may be checked for shoplifting when leaving a mall. In Israel, they are checked for explosives as you enter." All students from elementary to high school receive instruction on how to protect themselves, and teachers learn how to protect their children from terror attacks.³²⁰

The United Kingdom and Israel have an extensive history of school attacks and unlike those countries, the U.S. does not have a national school system. And, it is not realistic for the U.S. to nationalize educational emergency preparedness since schools have diverse needs including their urban or rural settings and geography. Having federal oversight and initiatives from the Department of Education does not equate to a national policy on school security. Though the UK serves as a model of resilience, there are lessons that the U.S. can teach them as well. Dr. Jane Eyre from the UK suggests their population take a cue from Americans when it comes to engaging citizens in the post-9/11 world. Eyre cites Citizen Corps and the promotion of Community Emergency Response Teams (CERT) as a model for large-scale incidents where first responders may not be readily available to respond.³²¹

³¹⁸ "The Israeli Experience in Homeland Security, Special Seminar on School Security, Tools for Tolerance Program Law Enforcement Partnership with Schools" (Los Angeles, October 16-17, 2007).

³¹⁹ Ariel Merari, *Israel's Preparedness for High Consequence Terrorism*, Harvard University. John F. Kennedy School of Government, October 2000), <https://www.llis.dhs.gov/docdetails/details.do?contentID=240> (accessed March 2, 2008), 6.

³²⁰ Ariel Merari, *Israel's Preparedness for High Consequence Terrorism*, Harvard University. John F. Kennedy School of Government, October 2000), 85.

³²¹ Eyre, *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response*.

F. ORGANIZATIONAL RESILIENCE/SCHOOLS

The National Response Framework (NRF) is the national guide promoting all hazards response and encourages resilient communities at the local level by preparing individuals and tending to the most vulnerable.³²² Resilience strategies will assist individuals and groups in the response phase by having strategies in place prior to an emergency.

Though families play the most critical role in supporting child disaster survivors, schoolteachers demonstrated their importance with Katrina-evacuated children by helping them cope with the tremendous loss of the disaster.³²³ This intensifies the role of the schools for the physical and psychological well-being of children. With an average of six hours a day, 180 days per year, schools are essential components of community preparedness, response, and recovery. Teachers and parents can provide input to assure children they will be cared for and not be left alone. These two factors are critical to the psychological well-being and recovery of victims of disaster and mass violence.³²⁴

Before children can learn the lessons of resilience, the concept must be adopted by organizations, including schools. The hostage taking at Platte Canyon is a prime example of the importance of the knowledge that the individual or the community has beforehand that increases their chances for survival and enhances the recovery process. In Platte Canyon, it was primarily the school officials' awareness of lockdown procedures, and the first responders' knowledge of Columbine that prepared them with the active shooter policy to mitigate the situation. Without the lessons of Columbine, Platte Canyon or any school could have suffered the same tragedy.

First responders have been studied as a group and are considered highly resilient, in part because of their numerous experiences with tragedy and coping. The tragedy at Columbine resulted in developing organizational resilience in law enforcement (active

³²² National Response Framework (Washington, DC: United States Department of Homeland Security, January 2008), <http://www.fema.gov/NRF> (accessed January 17, 2008), 5.

³²³ Peek, *Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction*, 14.

³²⁴ Butler, Panzer and Goldfrank, *Developing Strategies for Minimizing the Psychological Consequences of Terrorism through Prevention, Intervention, and Health Promotion*, 110-111.

shooter policies). Public health and the fire service, by virtue of their missions, are resilient-oriented organizations. Outside of conventional first responder organizations, Rick Rescorla turned Morgan Stanley Dean Witter into a resilient organization. As the head of security for Morgan Stanley Dean Witter, the largest tenant of the building at the World Trade Center, the first World Trade Center bombing was a wake up call for Rick Rescorla that would factor in saving lives on 9/11. Rescorla knew it was foolish for them to rely on first responders to save his employees. He was met with great resistance as he forced his employees to participate in many surprise fire drills. After the first tower was hit, Port Authority officials urged the tenants of the second tower to remain at their desks. Rescorla ignored the direction and systematically ordered Morgan Stanley employees out. By the time the second plane hit, Rescorla had led his employees from the 73rd floor to the 44th floor. At the time of collapse, the 2,687 Morgan Stanley employees were safe. Only 13, including Rescorla and four of his security officers were inside.³²⁵

In the UK, policymakers have adopted the term resilience to describe the ways they would like to reduce the nation's susceptibility to major incidents of all kinds by reducing their probability of occurring. The 'resilience agenda' achieves this by building institutions and structures in such a way that minimizes possible effects of disruption. This is accomplished by doing the following three things:

1. Build a comprehensive capability for anticipating major incidents to prevent them or take action in advance that will mitigate their effects.
2. Ensure that planning for response and recovery is geared to the risk therefore ensuring preparedness.
3. Promote a culture of resilience including business continuity thus helping to reduce the disruptive effects of disaster.³²⁶

Along with promoting resilience, mental health and school officials can promote the idea of psychological first aid (PFA). PFA is a group of skills identified to limit distress and negative health behaviors that can increase fear, arousal, and subsequent health care utilization. Though no evidence is currently available to test its efficacy,

³²⁵ Ripley, *How to Survive a Disaster*, 45.

³²⁶ Philip Buckle and Eve Coles, "Developing Community Resilience as a Foundation for Effective Disaster Recovery," *Australian Journal of Emergency Management* 19, no. 4 (November 1, 2004), <http://www.ag.gov.au/agd/EMA/emaInternet.nsf/Page/AJEM#current> (accessed April 16, 2008).

there is a push to promote PFA as a national strategic intervention to provide possible benefits in dealing with the psychological consequences of dealing with smaller scale random acts of violence. Similar to physical first aid that helps in coping with life's stressful and traumatic events, the idea is to promote community resilience and prevent adverse psychological effects.³²⁷

G. CHAPTER SUMMARY

After the attack on Beslan, Israel was viewed as the one country capable of understanding what the Russians had been through and the country that has necessarily developed techniques in dealing with consequences of such experiences. Numerous Israeli psychologists traveled to Beslan to treat the hostages and their families, as well as assisting their Russian counterparts to continue the therapy after their departure. They were invited because the Russians see the Israelis as able to handle their plight by living with terror everyday, and being able to bring a realistic approach to Beslan.³²⁸

Lessons from disastrous fires have shown that up-front knowledge is proven effective in the realm of fire education in schools. Hundreds of children died in school fires and explosions until 50 years ago when society had had enough. Children and school officials were taught the proper actions if fire was to occur. The anticipated fear and panic when “scaring” the children never happened. Instead, the fire drill became an example of teaching child preparedness to increase their chances of survival without causing panic. Similar results can be found with seatbelt and recycling campaigns.³²⁹

Resilience is not only applicable to terrorism or war. In this generation, natural disasters in the U.S. have provided all too many opportunities to embrace resilience. Building resilience in every community is crucial to managing the disaster and accounting for all individuals as demonstrated by Hurricane Katrina. When the next

³²⁷ Buckle and Coles, “Developing Community Resilience as a Foundation for Effective Disaster Recovery,” 108.

³²⁸ Giduck, *Terror at Beslan*, 230-231.

³²⁹ Conroy, *What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?* 95.

pandemic occurs, adopting community resiliency to help others will help alleviate fear, provide the most vulnerable with the care needed, and households will be equipped with emergency supplies.³³⁰

Individuals can be mobilized and community resiliency can be fostered if a comprehensive plan is in place and responsibility is distributed to the point where no one party is overtaxed. Since they are in every community, the public school system is uniquely established to deliver to even the most vulnerable populations that would otherwise be inaccessible.³³¹

There remains a lack of public discussion on the concept of resilience. To a large extent, there has been a failure to promote psychological resilience and address the long-term process of recovery and continuity. Greater attention should focus on improving the coping skills of American school children and the schools they attend. Not only should the U.S. model Israel by taking the “terror” out of terrorism, the U.S. should accept resiliency as the cornerstone and overarching theme in the form of an equipped, educated, and psychologically prepared community as the only true way to confront and defeat terrorism.³³² The final chapter will provide recommendations on adopting a resilient mindset that can be applied to U.S. schools in collaboration with other disciplines.

³³⁰ Cai and others, *Community Resiliency through Schools. Social Innovation and Entrepreneurship: Saving Lives in the Next Pandemic*, 2-26.

³³¹ Ibid., 2-3.

³³² Conroy, What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?, 91-92.

VII. RECOMMENDATIONS

Schools are a natural location to teach resilience but they cannot do it alone. It requires familial, community, and first responder support to be successful and indoctrinated into a resilient culture. Lessons learned are only that if applied.

A. EXPANDING RESPONSE TEAMS WITH A FOCUS ON RECOVERY

There is a great need to invest in the training and response of traditional first responders that include law enforcement, fire service, mental health, and emergency management. Often overlooked are school personnel, though they are the first on scene of a school disaster and expected to take charge, perform actions that lead to safety, and calming the fears of a large, vulnerable population. Time is of the essence when disaster strikes and school personnel are expected to lead their students to safety.

In the past decade, many schools have implemented the use of Crisis Response Teams (CRTs). The purpose of CRTs is to handle emergency situations within their own schools. Prior to disasters occurring, schools can incorporate a network within a school district and even within a single school that tasks itself much in the way first responders have with the formation of incident management teams.³³³ Experience has shown that school officials should incorporate the positions used in ICS, such as the need for a public information officer (PIO) at Platte Canyon, and a school liaison officer that can manage the influx of numerous agencies and parents.³³⁴

First responders utilize mutual aid during operational and recovery phases, especially if they become too emotionally involved from prolonged exposure to mass casualties. The schools, with less disaster experience, will endure similar emotions. Just as first responders incorporate incident command and utilize mutual aid resources when local resources are tapped, schools will face similar circumstances. Widespread disasters

³³³ Incident Management Teams are a designated team of trained personnel from different first responder departments, organizations, agencies, and jurisdictions, activated to support incident management at incidents.

³³⁴ Dorn and others, *Jane's Safe Schools Planning Guide for all Hazards*, 450.

from natural or intentional reasons will limit resources and first responders may not be coming right away. Schools should accept the possibility that they may need to be self-reliant until more help arrives. Creating partnerships should occur in the planning and preparedness phase to establish positive relationships that may come into play during a disaster. The time to foster such relationships is not in the midst of a disaster.³³⁵

This author maintains that for mass casualty incidents, it will not be practical for the affected school to employ their CRT to manage the event. If the event is significant enough, the entire school district may be too emotionally involved to effectively manage the disaster. Schools that are attacked or victimized will be too emotionally involved to effectively manage the crisis at hand.

School districts should consider establishing teams that branch into the outer circles of involvement. Just as victims are less impacted the further they are from the inner circles, the same would apply to response team members. If specific criteria are met as defined by schools, activation of a response team at the county level should be considered.

Furthermore, should they be called response teams? Higher impact disasters would realistically limit any response from school officials for a prolonged period during the event. These include violent episodes such as shootings or terrorist acts that place all within the school building in lockdown mode. Not to mention the fact that response teams will be absorbed in their own crises.

More appropriate would be the formation of crisis *recovery* teams that come from area schools, districts, or counties. It is not about titles; it is about function. The event's aftermath is when the teams will be most needed and best utilized. After the first responders have left as potential heroes, and sometimes the recipients of blame, the school officials will be left to deal with the psychological trauma of students and staff, and the physical continuity of school operations.

³³⁵ *Safeguarding Schools against Terror*, National School Safety Center, January 1, 2004, http://www.schoolsafety.us/pubfiles/safeguarding_schools_against_terror.pdf (accessed January 12, 2008).

Single schools, and maybe districts, may not have sufficient resources to assist in the management of large-scale disasters. However, county resources are usually enough to model the first responders' incident command system. This is not meant to preclude further needs that may require state educational resources for events such as Hurricane Katrina, terrorism attacks, or potential pandemics. Like ICS, the school's resource needs could expand or contract as needed. To keep crisis team members engaged in what could be long waiting periods between incidents, they should actively engage with safety partners in conducting threat assessments and training on a routine basis.

No one is more familiar with the school and the students than school teachers, SROs, and especially with the school layout and operation, the custodians. Adding mental health professionals and law enforcement representatives would help add experience to the emergency services system where schools lack experience. Specialized professionals are valuable resources that can aid in preparedness, planning and response.³³⁶

Specialized professionals are valuable resources that can aid in preparedness, planning and response.³³⁷ Adding mental health professionals, law enforcement representatives, and fire prevention specialists, such as the local fire marshal, would help add experience to the emergency services system where schools lack experience.

B. PROVIDE A STRONGER LINK BETWEEN SCHOOLS AND PUBLIC HEALTH

Public health can be a helpful partner in prevention, preparedness and response efforts and can help schools address the long road to recovery if a traumatic incident occurs. Public health has largely been a victim of its own success. Following the eradication of the last known smallpox case in Ethiopia in 1977, and other infectious diseases that long plagued society, they were rewarded with continuous cuts in funding.

³³⁶ Dorn and others, *Jane's Safe Schools Planning Guide for all Hazards*, 289.

³³⁷ Ibid., 289.

The anthrax scares of 2001 and associated hoaxes exposed U.S. public health shortcomings and resulted in a resurgence that looked at public health's role in disasters of all types.³³⁸

Similar to fire prevention education, perhaps nowhere may the opportunity to promote community resilience be better than for health emergencies, where the biggest concern for schools would be food or beverage contamination. Schools should coordinate with public health officials should prepare plans in dealing with the response and mitigation of biological threats.³³⁹

Public health is prevention oriented and capable of promoting wellness education, including resilience in schools. The goals of public mental health are: (a) protection of the general population through preventive measures; (b) early detection of and intervention for populations at risk; and (c) reducing symptom severity and functional impairment among people with chronic psychiatric disabilities.³⁴⁰

The New York Board of Education came up with the following “lessons learned” in regards to mental health considerations during and following the 9/11 attacks.

- **Engage experts in the design of mental health response.** New York officials utilized the few experts there were in such disasters-Oklahoma City and the World Trade Center bombing (1993).
- **Data and information gathering.** A needs assessment provided the appropriate tools of scientific and psychological data gathering. The compilation of assessments gathered by the BOE will constitute a tremendous contribution to field for those who suffer similar attacks in the future.
- **Quality control assurance.** Many people will rush to assist following a mass casualty incident. Mechanisms for screening the individuals are needed, as is the need to handle the enormous number of phone calls with qualified, informed individuals.

³³⁸ Mitchell, *State Strategies for Fully Integrating Public Health into Homeland Security*, 1-12.

³³⁹ Gjelsten, *Homeland Security Planning for Urban Area Schools*.

³⁴⁰ Friedman, *Toward a Public Health Approach for Survivors of Terrorism*, 529.

- **Provide staff with mental health services.** Staff will require many of the psychological needs that children will, yet they may be overlooked. BOE Crisis management and mental health services were made available to staff.
- **Mental Health Crisis Team pre-planning is critical.** 9/11 and other large-scale disasters will overwhelm the resources that are currently available in schools. It is imperative that relationships are formed and developed with consultants, mental health professionals and other referral organizations for a crisis team.
- **Mental health services should address the needs of the entire family.** Traditional treatment would focus solely on the child. The child's role within the family context must be recognized to effectively support the child.³⁴¹

C. ENGAGE LOCAL LAW ENFORCEMENT

At the collegiate level, there existed a good relationship between law enforcement agencies in Blacksburg and the VTPD. However, gaps existed that prevented the sharing of information between law enforcement and school officials. This gap enabled Cho to slip through the cracks. One of the most critical components in relation to first responders is clearly defining the role of school liaison officers or SROs. In U.S. high schools, SROs are most likely to be the first to engage school shooters or terrorists. Law enforcement and school officials should have a clear, cohesive understanding of what the SRO is and what the SRO is not.

After Columbine, the U.S. Secret Service and U.S. Department of Education embarked on the Safe School Initiative to identify information that could be obtainable, or “knowable,” prior to an attack. The report sought to understand the thinking, planning and other pre-attack behaviors engaged in by shooters who targeted and carried out school shootings. The ten key findings from the Safe School Initiative that will have implications for the development of strategies to address the problem of targeted school violence are:

³⁴¹ Markenson, Degnan and Thomas, *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*, 23-24.

- Incidents of targeted violence at school rarely are sudden, impulsive acts.
- Prior to most incidents, other people knew about the attacker's idea and/or plan to attack.
- Most attackers did not threaten their targets directly prior to advancing the attack.
- There is no accurate or useful profile of students who engaged in targeted school violence.
- Most attackers engaged in some behavior prior to the incident that caused others concern or indicated a need for help.
- Most attackers had difficulty coping with significant losses or personal failures. Moreover, many had considered or attempted suicide.
- Many attackers felt bullied, persecuted, or injured by others prior to the attack.
- Most attackers had access to and had used weapons prior to the attack.
- In many cases, other students were involved in some capacity.
- Despite prompt law enforcement responses, most shooting incidents were stopped by means other than law enforcement intervention.³⁴²

Schools are soft targets that are vulnerable to attack as demonstrated in Beslan. Russia has to live with the fact that hundreds were killed including children at an unprotected school. The lessons are available that allow a proactive approach before disaster strikes. The reaction to 9/11 included federalizing airport security with the formation of the Transportation Security Administration (TSA). If the U.S. can react by federalizing airport security, consideration should be given to standardizing approaches to school security, including the role of SROs. This does not advocate another governmental bureaucracy or federalizing SROs, similar to Israel's National Police Force School Security Unit. However, the debate could be made that schools are more vulnerable to attack than airplanes. Standardized training, minimum qualifications, and physical requirements would provide consistent expectations, increase professionalism, and may serve as a deterrent from those considering attacks. As pointed out at Columbine, the roles of SROs are ambiguous and without standards.

³⁴² Vossekuil and others, *The Final Report and Findings of the Safe School Initiative: Implications for the Prevention of School Attacks in the United States*, 4.

Lockdown drills should be discussed as there are numerous scenarios that can occur. Bomb threats, explosions, gunmen, and chemical releases will require different responses from sheltering in place to evacuation. Are there secondary options to initiate lockdown procedures or is the front office the only option? Gunmen will not check in at the front office and with the numerous points of entry, they may enter from a remote, unnoticed area of the school. Ten, twenty, fifty years from now, will the modern lockdown protocols still apply? In other words, lockdown procedures have existed for nearly a decade as a reaction to known threats. It is the unknown threats that may present complex situations that require different actions, including prompt escape from teachers and students. Lockdown policies should not be static and need continuous assessment to consider alternative solutions for alternative situations. Any considerations will require the vital input from law enforcement.

First responders, primarily from law enforcement need to consider and plan for worst-case scenarios involving schools. After action reports and case studies have shown law enforcement vulnerabilities and challenges following mass casualty incidents at schools. They need to place an added emphasis on perimeter control and security, whose absence played such a crucial role in Beslan. Many parents and bystanders will be arriving before first responders and will add to scene confusion. It is imperative for law enforcement to take control early as the situation develops. Before tactical or fiscal considerations, parents, school officials, and first responders must first consider the reality that such an event could happen, and adopt the mental and psychological preparation that will be required.³⁴³

D. EDUCATE PARENTS

Information sharing is a critical component and parents should be involved in emergency planning. However, training of parents is easier said than done. Generally, the older their children get, the less involved parents become in school life. Schools have become proxy daycare centers as both parents are often working full-time jobs, and have other commitments. It is naïve to believe that parents, even informed ones, will obey all

³⁴³ Giduck, *Terror at Beslan*, 288.

instructions to stay away from emergency scenes. The data from the history of school disasters have revealed crowd control as a serious issue. However, first responders, mental health professionals, and school officials can collaborate to deliver training to community residents. Topics should include the roles and responsibilities of the numerous agencies that will be responding to a mass casualty incident, and the expected role of parents that will provide them the information they need.

Absent from all case studies, was a significant pre-existing relationship that allowed parents to know the first responders and school officials. Making the effort to share information with parents can go a long way towards establishing confidence and public trust towards governmental agencies - whether they are schools or first responders. Parents are likely to be more cooperative if they know schools are watching out for their children's interest. In fairness, parents should bear some of the responsibility in preparing their children to be self-reliant and not place the full burden on schools and first responders. The reality is that the public is not held to the same expectation. More effective in educating parents is the transfer of information from teachers to children to home. Projects that require parental acknowledgement of receiving educational materials increase the chances of interaction and involvement with their children.

E. PROMOTE RESILIENCE IN SCHOOLS

Fire deaths in schools have been all but eliminated as no one has died in a school fire in American schools in decades. Unfortunately, it took the deaths of hundreds in numerous conflagrations until society demanded safer schools through building construction, fire protection systems including sprinklers, and teaching children how to react in the event of a fire. This was also preparing them in the pre-event phase, which ingrained knowledge and provided options during perilous times as seen with the Flight 93 passengers on 9/11.

The brain can be trained to respond more appropriately in times of high stress, which may improve performance by reducing fear. While safety rituals such as fire drills and listening to a flight attendant's safety points are largely considered a waste of time, they are proven to be utilized when needed and increase chances of life safety. As a loud

sound will cause animals to snap from their stupor, many flight attendants are being trained to scream at passengers on burning planes, “Get out! Get out! Go!” People respond well to leadership during a crisis.³⁴⁴

The essence of time in survival has been highlighted. New smoke alarms have a feature that allows parents to record their voice to command their children to wake up during a fire. The smoke alarm was developed after numerous incidents of children and adolescents not waking up to the beeping smoke alarm. The authority of their parent’s voice yelling at them has proven to be more effective in waking them up in a timely fashion.³⁴⁵

From first responders to school officials to children, knowing what to do can mean the difference between life and death. Just as fire prevention education does not require vast amounts of education dollars, nor should strengthening resilience. Mental health and other first responders need to get more engaged with the school community similar to the decade’s long successes of fire prevention education. Fire prevention has increased resilience for children by empowering them on a regular basis on how they can protect themselves from fire. This will also help parents get informed as they receive resilient messages on a routine basis.

Advanced knowledge and experience will enhance resilience. Conversely, children that are uninformed regarding hazards, warnings, evacuation and other protective behaviors are at greater risk for death and injury when disaster strikes.³⁴⁶ During extreme stress, brains search for an appropriate survival response. Sometimes, the wrong response is chosen, like the deer that freeze in the headlights of a car. If trained properly, the brain can respond with less fear, making paralysis less likely. A look at the fire prevention education model shows the importance of mind conditioning. During mandatory and unexpected fire drills, if the worst comes to pass, knowledge of

³⁴⁴ Ripley, *How to Survive a Disaster*, 43.

³⁴⁵ Ibid.

³⁴⁶ Peek, Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction, 20.

exits and stair locations can dramatically reduce fear.³⁴⁷ This does not suggest scaring children with inappropriate warnings of terrorists coming to their school. It does suggest empowering children with understanding the difference between evacuation and shelter in place, and between primary and secondary egress. It also suggests that there be a secondary meeting place outside in case the first meeting place is compromised. Being prepared, trained and proactive in U.S. schools mitigated the fire threat.³⁴⁸

Children in Israel are taught to take the “terror” out of terrorism. Schools in the U.S. can similarly provide realistic mental conditioning from an early age that will empower children and increase resilience. It may also encourage altruistic behavior that promotes taking care of those less able as seen during many school incidents. Obviously, there is increased sensitivity in teaching terrorism preparedness, particularly in the U.S. where the threat is still not considered viable by many. Resilience can still be taught without specifically focusing on terrorism. The next natural disaster, influenza outbreak, or any other threat can be better handled by providing an operational mindset before the event occurs.

Unlike natural threats, terrorism preparedness has much less to do with voluntary responsibility of the citizens for their children. Rather, it is the responsibility of local governments and their school systems to safely account for children during the school day. Even as the government urges through the Department of Homeland Security’s (DHS) www.ready.gov website that urges Americans to stock “ready kits” of basic supplies in their homes, schools, which are run by the government and house children five days a week, should practice what they preach by stocking the same supplies. Yet very few schools stock such emergency supplies.³⁴⁹

³⁴⁷ Ripley, *How to Survive a Disaster*, 43. .

³⁴⁸ Lake, *Publishers Letter*, 1.

³⁴⁹ Allison Phinney, *Preparedness in America's Schools: A Comprehensive Look at Terrorism Preparedness in America's Twenty Largest School Districts* (The America Prepared Campaign, Inc., September 2004), www.workplaceviolence911.com/docs/20040916.pdf (accessed August 19, 2007), 4-5.

F. FUTURE RESEARCH

1. The Impact of Terrorism on Children

Future contributions to research should focus on many aspects of recovery including what becomes of children that have survived mass casualty incidents? Fires and other natural disasters have provided a rich history of how survivors have either coped, or proven their inability to move on.

Mental health professionals need to differentiate conventional trauma from the impact of terrorism. Community ideology, beliefs, and cultural values, allow children to give meaning to traumatic events and promote adaptive functioning in everyday life – even under extreme conditions. Even after one of the worst European atrocities targeting a civilian population in Beslan, there is still a paucity of research analyzing the negative health impact on children, families, and the entire community. More research is needed to address the effects of terrorism on the mental health of children and their families. This will increase the efficiency of mental health services and help professionals be better prepared in supporting communities affected by terrorism.³⁵⁰

G. CHAPTER SUMMARY

Though inherently resilient, the entire community from parents, first responders, and school officials, can increase a child's resilience through formalized programs. First responders from law enforcement, the fire service, and public health have a vested interest in preparing schools and children for the consequential impact of mass casualty incidents. They often have the personnel that can provide training to children and educators as they have with fire prevention, DARE, and public health awareness. Mental health professionals should take the lead role in developing resilience strategies so that the proper information is being disseminated and received. While hoping for the best in crisis situations, the lack of experience and coping skills will cause greater harm to children and the community. The human tendency is to react after a disaster occurs. Preparedness planning, training and collaboration between schools, public safety

³⁵⁰ Moscardino and others, *Narratives from Caregivers of Children Surviving the Terrorist Attack in Beslan: Issues of Health, Culture, and Resilience*, 1777-1786.

agencies and government emergency management authorities can mitigate the impact of emergencies, improve responses and accelerate recovery. The pre-event phase is the proper time to encourage resiliency; not when dealing with the long-term recovery process.

APPENDIX. FATAL SCHOOL SHOOTINGS IN THE UNITED STATES

1966 - 2007

DATE	LOCATION	DESCRIPTION
N/A	N/A	Statistics computed solely by analyzing the information located in this compilation.
N/A	N/A	General articles/information
Aug. 1, 1966	Austin, TX	Charles Whitman, 25, points a rifle from the observation deck of the University of Texas at Austin's Tower and begins shooting in a homicidal rampage that goes in for 96 minutes, Sixteen people are killed, 31 wounded.
Feb. 8, 1968	Orangeburg, SC	This index does not include the incidents involving protests.
May 4, 1970	Kent, OH	
May 14-15, 1979	Jackson, MS	
July 12, 1976	Fullerton, CA	Edward Charles Allaway, 37, a custodian at the Cal State Fullerton Library, shoots nine people in the basement and first floor of the library with a .22 caliber rifle. The shootings occur shortly before 9:00 am, when the library was scheduled to open. Seven of the nine wounded victims die. The victims were his fellow university employees. Incident coined "Fullerton Library Massacre."
Jan. 29, 1979	San Diego, CA	Brenda Ann Spencer, 16, wounds eight children and one police officer and kills the principal and custodian when she opens fire across the street from her San Diego home. Spencer tells police that she killed two people and wounded nine because she "didn't like Mondays." She is in prison.
Jan. 20, 1983	St. Louis, MO	Eight-grader, at Parkway South Junior High School, David Lawler, 14, shoots two of his classmates then turns the gun on himself and commits suicide. David brought two guns to school and used one of them on himself to end the violence.
Jan. 21, 1985	Goddard, KS	James Allen Kearbey, 14, armed with a M1-A semi-automatic rifle and a .357-caliber handgun, kills the principal and wounds two teachers and a student at his Goddard Junior High School. Kearbey pleaded no contest and served seven years in a state youth facility.
May 20, 1988	Winnetka, IL	Laurie Dann, 30, shoots six students at an elementary school, killing one second-grader. She then shoots a man in a nearby house before committing suicide.

DATE	LOCATION	DESCRIPTION
Sept. 26, 1988	Greenwood, SC	James Wilson, 19, opens fire in an elementary school. He shoots seven students and two teachers. Two 8-year-old girls die.
Jan. 17, 1989	Stockton, CA	Patrick Edward Purdy, a disturbed resident, opens fire on the Cleveland Elementary School playground with a semi-automatic, Type 56, assault rifle, killing five children and wounding 29 others and a teacher. The fatalities, (ranging from 6-years-old to 9-years-old) were all Cambodian immigrants, except for one child who was born in Vietnam. Incident is coined the “Stockton Massacre.”
Nov. 1, 1991	Iowa City, IA	Gang Lu, 28, a graduate student in physics from China, reportedly upset because he was passed over for an academic honor, opens fire in two buildings on the University of Iowa Campus. Five University of Iowa employees are killed, including four members of the physics department. Two other people are wounded. Lu fatally shoots himself.
Dec. 14, 1992	Great Barrington, MA	Wayne Lo, 18, student at Simon’s Rock College of Bard, approaches a security-guard shack on the campus and begins shooting, as he says now, “at anything that moved.” Lo fires at least nine rounds during the following 20 minutes, killing another student and a Spanish professor and wounding four others. Lo had not adjusted well to the liberal college environment. He held conservative views, which were deemed racist, homophobic and anti-Semitic by fellow students at the college. Steadily he had become more and more excluded by his fellow students.
Nov. 15, 1995	Lynnville, TN	James Rouse, 17, a student at Richland High School, kills one student and one teacher. Another teacher is seriously wounded. Rouse was convicted as an adult of two counts of first degree murder and one count of attempted murder. He was sentenced to life in prison without parole.
Feb. 2, 1996	Moses Lake, WA	Barry Loukaitis, 14, walks into algebra class with a hunting rifle in his trench coat and opens fire, killing the teacher and two students. Years before the shooting, his father began an affair and his mother became increasingly distant and often spoke of suicide. She frequently implied that Barry would also have to kill himself. In January of 1996, she informed Barry the date of the double-suicide would be Valentine’s Day. However, it is widely believed, and he himself claimed that relentless bullying at the school impelled him to this murderous rampage. Incident coined “Frontier Junior High Shooting.”
Aug. 15, 1996	San Diego, CA	Frederick Martin Davidson, 36, a graduate engineering student at San Diego State, is defending his thesis before a faculty committee when he pulls out a handgun and kills three professors.

DATE	LOCATION	DESCRIPTION
Feb. 19, 1997	Bethel, AK	Evan Ramsey, 16, opens fire with a shotgun in a common area of his high school, killing the principal and a student and wounding two others. Ramsey was sentenced to two 99-year prison terms.
Oct. 1, 1997	Pearl, MS	Luke Woodham, 16, brutally beats and stabs his mother, Mary Woodham to death and then drives her car to his high school. Wearing a blue-denim jacket, he makes no attempt to hide his rifle. He enters Pearl High School and shoots nine students. Two students died, including the suspect's ex-girlfriend. He goes on to wound seven others before the assistant principal retrieves a .45 caliber pistol from the glove compartment of his truck and subdues Woodham while he was trying to drive off the campus. Woodham confessed to shooting his classmates, but he claimed not to remember killing his mother. He pleaded insanity, but the jury rejected the insanity defense, and instead found him guilty.
Dec. 1, 1997	West Paducah, KY	Michael Carneal, 14, opens fire on a group of praying students killing three girls and wounding five others. He pleaded guilty but mentally ill to murder and is serving life in prison.
Mar. 24, 1998	Jonesboro, AR	Two boys, Mitchell Johnson, 13, and Andrew Golden, 11, both dressed in army-style camouflaged clothes, steal a van from Johnson's home and load it with camping supplies, food, and seven weapons which they stole from Golden's grandfather's house. The boys arrive and open fire on their middle school from nearby woods, killing four girls and a teacher and wounding ten others. Both boys were convicted of murder and can be held until the age of 21. Incident coined "Jonesboro School Massacre."
May 19, 1998	Fayetteville, TN	Three days before his graduation, Jacob Davis, 18, an honor student, opens fire at his high school, killing a classmate who was dating his ex-girlfriend. He was sentenced to life in prison.
May 21, 1998	Springfield, OR	Student Kipland "Kip" Kinkel, 17, kills his parents, William and Faith, both Spanish teachers at local high schools. He then arrives at class at Thurston High School and murders two of his classmates, and injures 25. His case has become one of the standard case studies in profiling students who bring guns to school for the purpose of murder. He was sentenced to nearly 112 years in prison.
April 20, 1999	Littleton, CO	Students Eric Harris, 18, and Dylan Klebold, 17, kill 12 students and a teacher and wound 23 others at Columbine High School. They had plotted for a year to kill at least 500 and blow up their school. At the end of their hour-long rampage they turned their guns on themselves.

DATE	LOCATION	DESCRIPTION
Nov. 19, 1999	Deming, NM	Victor Cordova, 12-year-old boy arrives at school dressed in camouflage and shoots Araceli Tena, a 13-year-old girl, with a .22 caliber gun as students return from lunch.
Feb. 29, 2000	Mount Morris Township, MI	A first-grade boy at Buell Elementary School fatally shoots classmate Kayla Rolland, 6, after the two children have a verbal spat. He took the .32-caliber handgun from his uncle's home where he was living.
Mar. 10, 2000	Savannah, GA	Darrell Ingram, 19, shoots and kills two students while they are leaving a school sponsored dance honoring the Beach High School girls basketball team's state championship.
May 26, 2000	Lake Worth, FL	Nathaniel Brazill, 13, an honor student, shoots and kills his English teacher on the last day of classes after the teacher refused to let him talk to two girls in his classroom. Police said the seventh-grader had been sent home for throwing water balloons and returned to the school with a handgun he found in his grandfather's dresser.
Mar. 5, 2001	Santee, CA	Santana High student Charles Andrew Williams, 15, opens fire with a pistol, killing two fellow students and wounding 13 others.
Mar. 30, 2001	Gary, IN	Donald R. Burt Jr., 17, shoots and kills fellow student outside Lew Wallace High School.
May 15, 2001	Ennis, TX	A 16-year-old sophomore upset over his relationship with a girl, takes 17 hostages in his English class. He shoots and kills himself and the girl.
Jan. 16, 2002	Grundy, VA	Graduate student Peter Odighizuwa, 42, recently dismissed from Virginia's Appalachian School of Law, returns to campus and kills the dean, a professor and a student before being tackled by students. The attack also wounds three female students.
Oct. 28, 2002	Tucson, AZ	Failing University of Arizona Nursing College student and Gulf War veteran Robert Flores, 40, walks into an instructor's office and fatally shoots her. A few minutes later, armed with five guns, he enters one of his nursing classrooms and kills two more of his instructors before fatally shooting himself.
April 24, 2003	Red Lion, PA	Principal of Red Lion Area Junior High is fatally shot in the chest by a 14-year-old male student, who then commits suicide, as students gather in the cafeteria for breakfast.
Sept. 24, 2003	Cold Spring, MN	John Jason McLaughlin, 15, shoots and kills two students at Rocori High School.
Mar. 21, 2005	Red Lake Indian Reservation, MN	Jeff Weise, 16, shoots and kills his grandfather and grandfather's girlfriend. He then proceeds to his high school where he kills a security guard, a teacher, and five students, and wounded seven other before killing himself.(10 total deaths including the shooter).

DATE	LOCATION	DESCRIPTION
Nov. 8, 2005	Jacksboro, TN	Kenneth Bartley Jr., 15, shoots three administrators and kills one using a .22-caliber handgun at Campbell County High School. He plead guilty to a single count of second-degree murder and two counts of attempted second-degree murder, and was sentenced to 45 years in prison.
Aug. 24, 2006	Essex, VT	Christopher Williams, 27, went to Essex Elementary School in Vermont and when he could not find his ex-girlfriend – a teacher, he shot and killed one teacher and wounded another. Earlier, he had killed the ex-girlfriend's mother. He attempted suicide but survived and was arrested.
Aug. 30, 2006	Hillsborough, NC	After shooting his father to death, a student opens fire at his high school, injuring two students. Deputies found guns, ammunition, and homemade pipe bombs in the student's car. The student had emailed Columbine High's principal telling him that it was "time the world remembered" the shooting at Columbine.
Sept. 2, 2006	Shepherdstown, WV	Douglas W. Pennington, 49, kills himself and his two sons, Logan, 26, and Benjamin, 24, during a visit to the campus of Shepherd University.
Sept. 17, 2006	Pittsburgh, PA	Five Duquesne University basketball players are wounded after a shooting on campus after a dance. One of the two shooters was allegedly upset that his date had talked to one of the athletes.
Sept. 27, 2006	Bailey, CO	Duane Roger Morrison, 53, enters Platte Canyon High School, claiming to be carrying a bomb. Morrison takes six female students hostage and sexually assaults them, then releases four. When police enter the classroom, Morrison opens fire before killing one hostage. The remaining hostage escapes. Paramedics confirm that Morrison had committed suicide.
Sept. 29, 2006	Cazenovia, WI	Eric Hainstock, 15, takes two guns into his rural school and fatally shoots the principal before being captured and arrested.
Oct. 2, 2006	Nickel Mines, PA	Charles Carl Roberts IV, 32, a milk-tank truck driver, walks into a one-room Amish schoolhouse with two rifles, a semi-automatic handgun, and 600 rounds of ammunition. He selects all the female students and shoots them execution-style, killing five (ages 7-13) and seriously wounding six. He then shoots himself, having left his wife suicide notes beforehand.
Jan. 3, 2007	Tacoma, WA	Douglas Chantabouly, 18, enters Henry Foss High School and shoots and kills a fellow male student. The school proceeds to enter lockdown. Students are moved to the school's gymnasium until police secure the building. Shortly after, Chantabouly is arrested walking through a nearby suburban neighborhood. Tacoma police believe that the shooting was due to a disagreement.

DATE	LOCATION	DESCRIPTION
April 16, 2007	Blacksburg, VA	Gunman, Seung-Hui Cho, 23, Kills 32 people and wounds 25 before committing suicide. The incident is comprised of two separate attacks, about two hours apart. One in a dorm the other in a classroom building.

LIST OF REFERENCES

- “165 CHILDREN PERISH IN FIRE :Penned in by Flames and Jammed Against Locked Door in Collinwood (Ohio) School. MANY TRAMPLED TO DEATH Broke from Fire Line as Flames Swept Up Stairway and a Panic Followed. INCENDIARISM IS SUSPECTED no Wires to Ignite the Woodwork Where the Flames Started in the Basement. TWO TEACHERS ARE VICTIMS Parents Fight with Firemen in Desperate but Vain Effort to Rescue the Little Ones.” *ProQuest Historical Newspapers the New York Times (1851 - 2004) Database.* (Document ID: 104798571). (1908), <http://www.proquest.com/> (accessed July 17, 2008).
- Allsopp, Jim. “40th Anniversary of Northern Illinois' Worst Tornado Disaster.” (2007), www.crh.noaa.gov/Image/lot/severe/21Apr1967_tornado.pdf (accessed March 19, 2008).
- Angels Too Soon.* DVD. Anonymous Chicago: WTTW, 2003a.
- Ayalon, Ofra. “Community Mental Care for Victims of Terrorist Activities.” *Community Stress Prevention*, <http://www.icspc.org/?CategoryID=268&ArticleID=205> (accessed August 8, 2008).
- Baca, Enrique, Enrique Baca-Garcia, Maria Mercedes Perez-Rodriguez, and Maria Luisa Cabanas. “Short and Long-Term Effects of Terrorist Attacks in Spain.” In *The Trauma of Terrorism: Sharing Knowledge and Shared Care, an International Handbook*, edited by Yael Danieli, Danny Brom and Joe Sills, 157-167. New York: The Haworth Press, 2005.
- Baum, Naomi L. “Building Resilience: A School-Based Intervention for Children Exposed to Ongoing Trauma and Stress.” In *The Trauma of Terrorism. Sharing Knowledge and Shared Care. An International Handbook*, edited by Yael Danieli, Danny Brom and Joe Sills, 487-496. New York: The Haworth Press, 2005.
- Benbenishty, Rami, Ron Avi Astor, and Roxana Marachi. “A National Study of School Violence in Israel: Implications for Theory, Practice and Policy.” In *Handbook of School Violence and School Safety: From Research to Practice*, edited by Shane Jimerson and Michael Furlong, 483. New Jersey: Lawrence Erlbaum Associates, 2006.
- Beutler, Larry E., Gil Reyes, Zeno Franco, and Jennifer Housley. “The Need for Proficient Mental Health Professionals in the Study of Terrorism.” In *Psychology of Terrorism*, edited by Bruce Bongar, Lisa M. Brown, Larry E. Beutler, James N. Breckenridge and Philip G. Zimbardo, 32-55. New York: Oxford University Press, 2007.

- Bongar, Bruce. "The Psychology of Terrorism. Defining the Need and Describing the Goals." In *Psychology of Terrorism*, edited by Bruce Bongar, Lisa M. Brown, Larry E. Beutler, James N. Breckenridge and Philip G. Zimbardo, 3-9. New York: Oxford University Press, 2007.
- Buckle, Philip and Eve Coles. "Developing Community Resilience as a Foundation for Effective Disaster Recovery." *Australian Journal of Emergency Management* 19, no. 4 (November 1, 2004),
<http://www.ag.gov.au/agd/EMA/emaInternet.nsf/Page/AJEM#current> (accessed April 16, 2008).
- Butler, Adrienne S., Allison M. Panzer, and Lewis R. Goldfrank. "Developing Strategies for Minimizing the Psychological Consequences of Terrorism through Prevention, Intervention, and Health Promotion." In *Preparing for the Psychological Consequences of Terrorism. A Public Health Strategy*, 99-134. National Academy of Sciences, November 19, 2003.
- Cai, Francisco, Fagan Harris, Emilly Gorbaty, and Ellen Truxaw. *Community Resiliency through Schools. Social Innovation and Entrepreneurship: Saving Lives in the Next Pandemic*. Stanford University, June 7, 2007,
http://sie.stanford.edu/1/reports/community_resiliency.pdf (accessed April 17, 2008).
- Campbell, Andrea, Ed Cairns, and John Mallett. "Northern Ireland: The Psychological Impact of "the Troubles." In *The Trauma of Terrorism: Sharing Knowledge and Shared Care, an International Handbook*, edited by Yael Danieli, Danny Brom and Joe Sills, 177-178. New York: The Haworth Press, 2005.
- Cherkasov, Alexander. "Looking Back at Beslan." *Russian Analytical Digest* no. 5 (August 29, 2006): March 25, 2008,
<http://se1.isn.ch/serviceengine/FileContent?serviceID=PublishingHouse&fileid=E67E3A84-38C3-0150-C8FA-CF144BE3AE7F&lng=en> (accessed March 25, 2008).
- Clarke, Lee. "Panic: Myth or Reality?" In *Introduction to Homeland Security. Course Readings*. 0701/0702 Cohort-Spring 2007 ed. Monterey, California: Naval Postgraduate School.
- Cohen, Ariel, Ph.D. "U.S. - Russian Security Cooperation after Beslan." *Background* no. 1809 (October 25, 2004): March 27, 2008,
<http://www.heritage.org/Research/RussiaandEurasia/bg1809.cfm> (accessed March 27, 2008).
- Comer, Jonathan and Philip Kendall. "Terrorism: The Psychological Impact on Youth." *Clinical Psychology: Science and Practice* 14, no. 3 (September 2007): 179-212,
<http://dx.doi.org/10.1111/j.1468-2850.2007.00078.x.>, (accessed July 9, 2008).

Conroy, Annemarie. "What is Going to Move the Needle on Citizen Preparedness? Can America Create a Culture of Preparedness?" master's thesis, Monterey, CA: Naval Postgraduate School, March 2008, www.chds.us (accessed August 18, 2008).

Cowan, David and John Kuenster. *To Sleep with the Angels. The Story of a Fire.* Chicago: Ivan R. Dee, 1996.

Crenshaw, Martha. "The Organization of Terrorism." In *Terrorism: What's Coming? The Mutating Threat*, edited by Ellis, James O. III, 19-27. Oklahoma City, OK: Memorial Institute for the Prevention of Terrorism, 2007, www.mipt.org (accessed October 19, 2007).

Dorn, Michael and Chris Dorn. *Innocent Targets - when Terrorism Comes to Town.* Safe Havens International, 2005.

Dorn, Mike, Gregory Thomas, Marleen Wong, and Sonayia Shepherd. *Jane's Safe Schools Planning Guide for all Hazards.* 1st ed. Coulsdon, UK: Jane's Information Group, 2004.

"Effects of Traumatic Stress after Mass Violence, Terror Or Disaster." National Center for PTSD.

http://www.ncptsd.va.gov/ncmain/ncdocs/fact_shts/fs_effects_disaster.html?opm=1&rr=rr53&srt=d&echorr=true (accessed August 3, 2008).

Egan, Timothy. "Oregon Freshman Goes to Court as Number of Deaths Rises to 4." *New York Times*, May 23, 1998, <http://www.proquest.com/> (accessed July 18, 2008).

Eyre, Jane, Ph.D. *Literature and Best Practice Review and Assessment: Identifying People's Needs in Major Emergencies and Best Practice in Humanitarian Response.* United Kingdom: Department for Culture, Media and Sport, October 2006 (accessed July 14, 2008).

Flynn, Stephen E. "America the Resilient. Defying Terrorism and Mitigating Natural Disasters." *Foreign Affairs* 87, no. 2 (March/April 2008): 2-8, <http://opim.wharton.upenn.edu/risk/> (accessed April 16, 2008).

Forster, Peter. "Beslan: Counter-Terrorism Incident Command: Lessons Learned." *Homeland Security Affairs* 2, no. 3 (October 2006): 1-7, <http://www.hsaj.org/?fullarticle=2.3.3> (accessed May 12, 2008).

Friedman, Matthew J. "Toward a Public Health Approach for Survivors of Terrorism." In *The Trauma of Terrorism*, edited by Yael Danieli, Danny Brom and Joe Sills, 527-536. New York: The Haworth Press, 2005.

Giduck, John. *Terror at Beslan.* Colorado: Archangel Group, 2005.

Gjelsten, Craig. "Homeland Security Planning for Urban Area Schools." Naval Postgraduate School, 2008,
https://www.hSDL.org/homesec/docs/theses/08Mar_Gjelsten.pdf&code=42be6429e55d66881afeef1764a499dd (accessed April 9, 2008).

Graham, James, Steve Shirm, Rebecca Liggin, Mary E. Aitken, and Rhonda Dick. "Mass-Casualty Events at Schools: A National Preparedness Survey." *Pediatrics. Official Journal of the American Academy of Pediatrics* 117, (2006): e8-e15, <http://www.pediatrics.org/cgi/content/full/117/1/e8> (accessed January 21, 2008).

Grigg, William N., Jr. "New London, Texas School Explosion." <http://www.nlse.org/> (accessed July 17, 2008).

Hawryluck, Laura, Wayne L. Gold, Susan Robinson, Stephen Pogorski, Sandro Galea, and Rima Strya. "SARS Control and Psychological Effects of Quarantine, Toronto, Canada." *Emerging Infectious Diseases* 10, no. 7 (July 2004), www.cdc.gov/eid (accessed August 25, 2008).

Hodges, Lori R. *Platte Canyon High School Shooting after Action Report. Recommendations for Emergency Services Agencies Based on the Events of September 27, 2006 at Platte Canyon High School.* Fairplay, Colorado: December 31, 2006 (accessed October 25, 2007).

"How to Behave in a Rockets or Mortar Attack." http://www.oref.org.il/315-en/PAKAR.aspx#paragraph_3 (accessed July 15, 2008).

"International Meeting on Helping Schools Prepare for and Respond to Terrorist Attacks." <http://www.oecd.org/dataoecd/44/52/2757445.pdf>, Organization for Economic Cooperation and Development, February 13-14, 2002, <http://www.oecd.org/dataoecd/44/52/2757445.pdf> (accessed January 22, 2008).

Isaac, Jimmy. "Faces, Forever Changed: School Blast Survivors Still Unable to Talk about those they Lost." *Longview News-Journal*, March 18, 2007, http://www.news-journal.com/news/content/news/stories/03182007_LONDON_MAIN.html (accessed July 20, 2008).

Kindt, Michael T. *Building Population Resilience to Terror Attacks: Unlearned Lessons from Military and Civilian Experience.* Maxwell Air Force Base, Alabama: USAF Counterproliferation Center, November 2006, <https://www.hSDL.org/homesec/docs/dod/nps30-052307-01.pdf&code=08c874b96381deee8a1f0f2aed8defd1> (accessed March 20, 2008).

Kovalenko, Gennady. *Countering Urban Terrorism in Russia and the United States. Proceedings of a Workshop.* Washington, DC: The National Academies and the Russian Academy of Sciences, 2006.

Kraybill, Donald B., Steven M. Nolt, and David L. Weaver-Zercher. *Amish Grace. How Forgiveness Transcended Tragedy*. San Francisco: Jossey-Bass, 2007.

Lake, Brian. "Publishers Letter." *Homeland Defense Journal* 6, no. 2 (March 2008): 1, <http://homelanddefense.epubxpress.com/> (accessed July 7, 2008).

Leinwand, Donna. "Va. Tech More Secure a Year After Massacre. But Officials Stay Mindful of Campus Freedoms." *USA Today*, April 16, 2008.

"Lessons from the Collinwood School Fire." <http://www.pajamadeen.com/firefighting/collinwood-fire> (accessed July 15, 2008).

Lessons Learned from Israel School Shooting. Columbia, SC: South Carolina Information Exchange, March 28, 2008, sciex@sled.sc.gov (accessed March 29, 2008).

Marek, Ed. "Teachers, Students, Neighbors Rising to Great Acts of Heroism, the Tragedies of Deadly School Fires." www.talkingproud.us/Education040206.html (accessed July 23, 2008).

Markenson, David, Anne Degnan, and Gregory Thomas. *Uncommon Sense, Uncommon Courage: How the New York City School System, its Teachers, Leadership, and Students Responded to the Terror of September 11*. Columbia University: Columbia University. Joseph L. Mailman School of Public Health, December 2004, http://www.ncdp.mailman.columbia.edu/files/9_11reportASSESSMENT.pdf (accessed November 12, 2007).

Mitchell, Jeff. "State Strategies for Fully Integrating Public Health into Homeland Security." In *Special Topics in American Government for Homeland Security*. 0701/0702 Cohort. Fall 2007 ed., 1-12. Monterey, CA: Naval Postgraduate School, November 23, 2005.

Moscardino, Ughetta, Giovanna Axia, Sara Scrimin, and Fabio Capello. "Narratives from Caregivers of Children Surviving the Terrorist Attack in Beslan: Issues of Health, Culture, and Resilience." *Social Science & Medicine* 64, no. 8 (2007): 1776-1787, <http://nps.illiad.oclc.org/illiad/illiad.dll?SessionID=I130407393J&Action=10&Form=69&Value=29575> (accessed April 30, 2008).

National Response Framework. Washington, D.C.: United States Department of Homeland Security, January 2008, <http://www.fema.gov/NRF> (accessed January 17, 2008).

Oklahoma City-Seven Years Later. Lessons for Other Communities. Oklahoma: Oklahoma City National Memorial Institute for the Prevention of Terrorism, 2002, <https://www.llis.dhs.gov/docdetails.do?contentID=19> (accessed May 21, 2008).

- O'Toole, Mary Ellen, PhD. *The School Shooter: A Threat Assessment Perspective*. Quantico, VA: U.S. Department of Justice. Federal Bureau of Investigation, 2005, <http://www.fbi.gov/publications/school/school2.pdf> (accessed April 10, 2008).
- Pangi, Robyn. "After the Attack: The Psychological Consequences of Terrorism." *Perspectives on Preparedness* August 2002, no. 7, http://www.mipt.org/pdf/ksg_popno7.pdf (accessed December 8, 2007).
- Peek, Lori. "Children and Disasters: Understanding Vulnerability, Developing Capacities, and Promoting Resilience - an Introduction." *Children, Youth and Environments* 18, no. 1 (2008): 1-29, www.colorado.edu/journals/cye (accessed April 25, 2008).
- Phinney, Allison. *Preparedness in America's Schools: A Comprehensive Look at Terrorism Preparedness in America's Twenty Largest School Districts*. The America Prepared Campaign, Inc., September 2004, www.workplaceviolence911.com/docs/20040916.pdf (accessed August 19, 2007).
- Pluchinsky, Dennis. "Ethnic Terrorism: Themes and Variations." In *The Unconventional Threat to Homeland Security*, 35-42. Monterey, CA: Naval Postgraduate School, 2005.
- Psychosocial Issues for Children and Families in Disasters: A Guide for the Primary Care Physician*. Elk Grove, Illinois: Work Group on Disasters. American Academy of Pediatrics, 2007, http://mentalhealth.samhsa.gov/_scripts/printpage.aspx?FromPage=http%3A//mentalhealth.samhsa.gov/publications/allpubs/SMA95-3022/default.asp (accessed May 3, 2008).
- Pynoos, Robert, M.D., Merritt D. Schreiber, PhD, Alan M. Steinberg, Ph.D., and M. D. Betty Pfefferbaum. "Impact of Terrorism on Children." In *Kaplan & Sadock's Comprehensive Textbook of Psychiatry. Volume II*, edited by Sadock, Benjamin J., M.D. and Sadock, Virginia A., M.D. Eighth ed. vol. 2, 3551-3560. New York: Lippincott Williams & Wilkins, 2005.
- Responding to Terrorism Victims: Oklahoma City and Beyond*. Washington, D.C.: United States. Department of Justice, October 2000, <https://www.hsdl.org/homesec/docs/justice/NCJ183949.pdf&code=42be6429e55d66881afeef1764a499dd> (accessed April 16, 2008).
- Ripley, Amanda. How to Survive a Disaster. *Time Magazine*, June 9, 2008. 41.
- Safeguarding Schools against Terror*. National School Safety Center, January 1, 2004, http://www.schoolsafety.us/pubfiles/safeguarding_schools_against_terror.pdf (accessed January 12, 2008).

Security, Homeland. *Protecting our Schools: Federal Efforts to Strengthen Community Preparedness and Response*. 1, Congress #110 sess., May 17, 2007, <https://www.hSDL.org/homesec/docs/testimony/nps30-052107-06.pdf&code=236f28f1735ad8546c63ce14eb8064da> (accessed August 29, 2007).

Sekhri, Rajiv. "SARS Shuts Toronto School, 6,400 in Quarantine." *Washington Post*, <http://www.washingtonpost.com/wp-dyn/articles/A49008-2003May28.html> (accessed August 23, 2008).

Shoemaker, Eric. "Terrorism in American Schools: The First of all Fears. Confronting Violence in our Schools: Planning, Response, and Recovery." (January 8-12, 2007): August 19, 2007, http://www.riskinstitute.org/NR/rdonlyres/88BB8397-1BA9-4ED0-8B15-8B9377CCB1F6/0/Shoemaker_TerrorisminAmericanSchools.pdf (accessed August 19, 2007).

Simpson, Charles and Marty Sanford. *Law Enforcement Response to Multi-Casualty Incidents*. Rancho Cordova, CA: Governor's Office of Emergency Services. Law Enforcement Branch, January 21, 2003.

Status of School Districts' Planning and Preparedness GAO-07-821T Cong., 1, Congress #110 sess., May 17, 2007, <http://searching.gao.gov/cs.html?charset=iso-8859-1&url=http%> (accessed July 20, 2007).

Strohl, Dan. "School Lockdown Plans and Occupant Safety." *Building Safety Journal* (October 2007): 33-44, http://www.iccsafe.org/news/bsj/1007_School.pdf (accessed July 10, 2008).

Survey Finds SARS having a Significant Psychological, Economic Impact on Lives of Toronto Residents. Boston, MA: 2003b, <http://www.hsph.harvard.edu/news/press-releases/archives/2003-releases/press06162003.html> (accessed August 23, 2008).

The Report of Governor Bill Owens' Columbine Review Commission. 2001, www.state.co.us/columbine/Columbine_20Report_WEB.pdf (accessed July 9, 2008).

Townsend, Francis. "The Federal Response to Hurricane Katrina: Lessons Learned." In *Multi-Discipline Approaches to Homeland Security*. Cohort 0701/0702. Winter 2008 ed., 1-74. Monterey, CA: Naval Postgraduate Schools, 2006.

United States, Department of State. "Terrorism Strikes Russia: Summary of the Attacks from August 24 to September 3, 2004."

Uschan, Michael V. *The Beslan School Siege and Separatist Terrorism*. Milwaukee, WI: World Almanac Library, 2006.

Von Schreeb, Johan, Azret Kalmykov, and Hans Rosling. "Emergency Care Following at the Terror Attack in Beslan, North Ossetia, Russian Federation, 2004." *International Journal of Disaster Medicine* 2, (2004): 41-47, <http://nps.illiad.oclc.org/illiad/illiad.dll> /exchweb/bin/redir.asp?URL=<http://nps.illiad.oclc.org/illiad/illiad.dll> (accessed April 29, 2008).

Vossekuil, Bryan, Robert A., Fein Ph.D., Marsha Reddy Ph.D., Randy Borum Psy.D., and William Modzeleski. *The Final Report and Findings of the Safe School Initiative: Implications for the Prevention of School Attacks in the United States*. Washington, D.C.: United States Secret Service and United States Department of Education, June 2004.

Wanton Violence at Columbine High School. Emmitsburg, Maryland: United States Fire Administration. Federal Emergency Management Agency, 1999, <https://www.hsdl.org/homesec/docs/health/nps15-051004-02.pdf&code=d8dad054904a2cb530eb00f928bf2954> (accessed August 29, 2007).

Waxman, Hersh C., Jon P. Gray, and Yolanda N. Padron. *Review of Research on Educational Resilience*. Washington, D.C.: Center for Research on Education, Diversity & Excellence, 2003, <http://www.cal.org/crede/pubs/research/RR11.pdf> (accessed August 14, 2008).

Weissbecker, Inka, Sandra E. Sephton, Meagan B. Martin, and David M. Simpson. "Psychological and Physiological Correlates of Stress in Children Exposed to Disaster: Current Research and Recommendations for Intervention." *Children, Youth and Environments* 18, no. 1 (2008): 30-70, www.colorado.edu/journals/cye. (accessed April 22, 2008).

"What Happened at Ma'Alot, Kiryat Shmona, and Other Terrorist Targets in the 1970s?" http://www.palestinefacts.org/pf_1967to1991_terrorism_1970s.php (accessed May 3, 2008).

Williams, Mary Beth. "How Schools Respond to Traumatic Events. Debriefing Interventions and Beyond." In *Mass Trauma and Violence. Helping Families and Children Cope*, edited by Nancy Boyd Webb, 120-141. New York: The Guilford Press, 2004.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Glen Woodbury
Naval Postgraduate School
Monterey, California
4. Nadav Morag
Naval Postgraduate School
Monterey, California
5. Honorable Mayor William Roberts
City of Walled Lake
Walled Lake, Michigan